

**(Interim) Risk Management Guide for the Protection of Fish and Fish Habitat**

**Fish and Fish Habitat Protection Program**

**September, 2019**

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## 1.0 Purpose

The purpose of this document is to provide guidance to Fish and Fish Habitat Protection Program (FFHPP) practitioners in applying a risk management approach to decision-making under the Fisheries Act and the Species at Risk Act. Figure 1 illustrates the various steps and factors involved in the risk management process.

The risk management process described in this guide will be used by FFHPP practitioners to determine if the risk associated with a work, undertaking or activity (WUA) is best managed using a:

- non-regulatory instrument (i.e. Measures to Protect Fish and Fish Habitat (website), standards and codes of practice, Letter C (a letter of advice)); or
- regulatory instrument (i.e. Ministerial authorization, Prescribed Works Regulations (in future)).

This risk will assess:

- the pressures on fish and fish habitat caused by the WUAs;
- the avoidance and mitigation measures required to manage the pressures;
- the spatial extent of the affected area in relation to the affected habitat components;
- fish and fish habitat sensitivity; and,
- the persistence of pressures on fish and fish habitat.

The Risk Management guidance provided in the following pages is intended to be a starting point towards building a robust, standardized, science-based risk management process that will be shared publicly with stakeholders, partners and Canadians at large. The guidance will be piloted in all regions for the next 6 months.

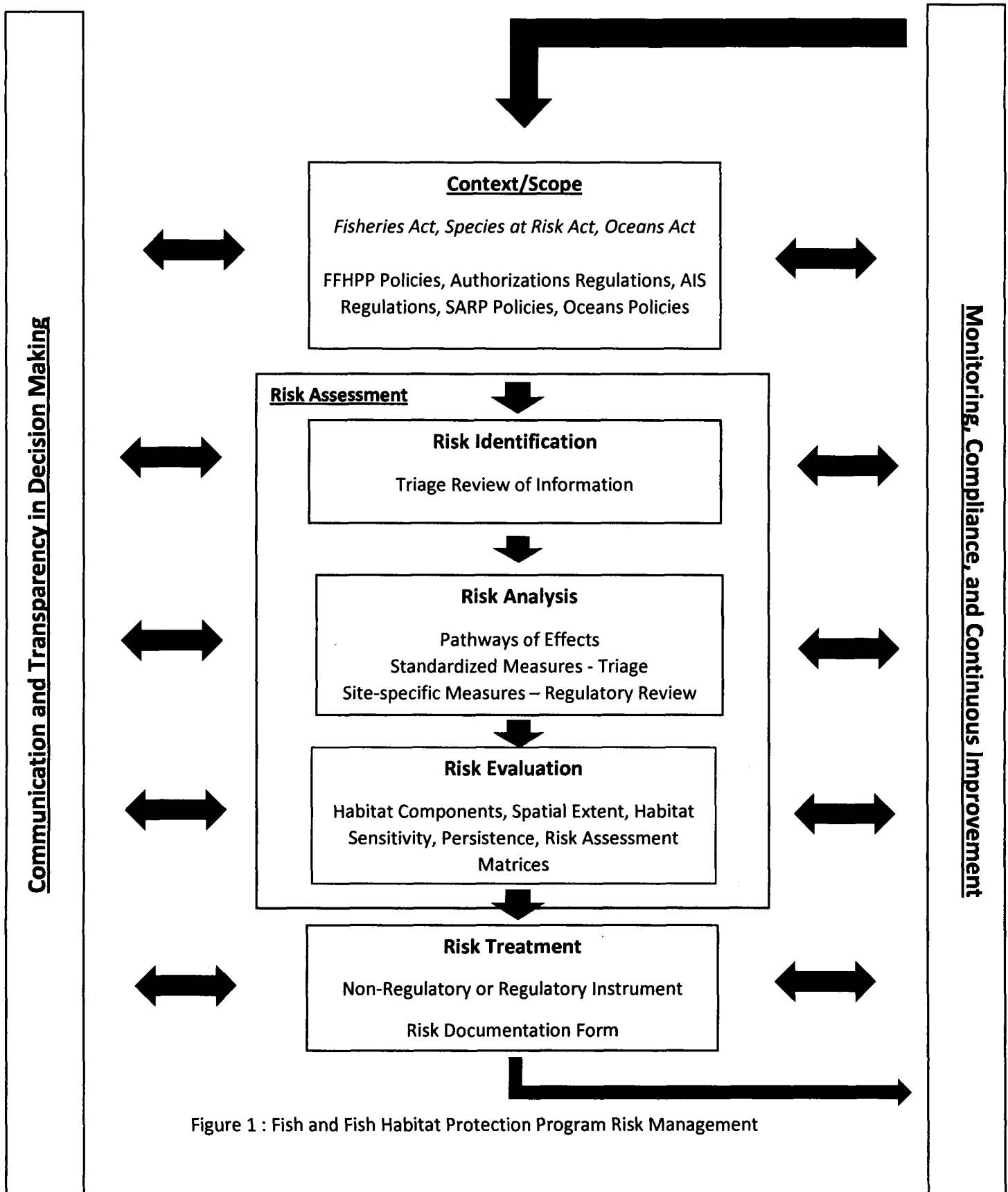


Figure 1 : Fish and Fish Habitat Protection Program Risk Management



## 2.0. Context and Scope

The Fish and Fish Habitat Protection Program (FFHPP) of Fisheries and Oceans Canada (DFO) conserves and protects fish and fish habitat by regulating WUA that could result in negative impacts to fish and fish habitat.

To do so, it applies the fish and fish habitat protection provisions of the *Fisheries Act* and the *Authorizations concerning fish and fish habitat protection regulations* (hereafter the Authorization Regulations), in combination with the relevant provisions of the *Species at Risk Act* and the *Aquatic Invasive Species Regulations* when necessary.

### 2.1. Fish and Fish Habitat Protection

The FFHPPs of the *Fisheries Act* encompass:

- a prohibition against causing the death of fish, by means other than fishing (subsection 34.4(1));
- a prohibition against causing the harmful alteration, disruption or destruction of fish habitat (subsection 35(1));
- a framework (factors) for considerations to guide the Minister's regulatory decision-making (section 34.1); and
- ministerial powers to ensure the free passage of fish or the protection of fish or fish habitat with respect to existing obstructions (section 34.3).

The risk management guidance provided here focusses on the prohibition against causing the harmful alteration, disruption or destruction of fish habitat. Risk management guidance on the death of fish, fish passage and flows will be developed in future, however previously developed guidance and tools and the Fish and Fish Habitat Protection Policy Statement can be used in the interim to help guide decision making.

The prohibition in subsection 35(1) states that:

- *35(1) No person shall carry on any work, undertaking or activity that results in harmful alteration, disruption or destruction of fish habitat.*

A person may carry on WUAs without contravening this prohibition, provided that they are carried on under the authority of one of the exceptions listed in subsection 35(2), and in accordance with the requirements of the appropriate exception. Ministerial authorizations granted to proponents under paragraph 35(2)(b) and in accordance with the Authorizations Concerning Fish and Fish Habitat Protection Regulations are the only exception used by FFHPP at this time.

The Department interprets the "harmful alteration, disruption or destruction" of fish habitat as:

- **any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes of fish.**

Therefore, FFHPP is responsible for managing the risk that the temporary or permanent change to fish habitat resulting from a WUA is likely to directly or indirectly impair the habitat's capacity to support one or more life processes of fish. Managing this risk is a key part of fulfilling the purpose of the Act that fish and fish habitat are conserved and protected.

## 2.2. Aquatic Species at Risk

DFO is responsible for the administration of the Species at Risk Act (SARA) with respect to aquatic species wherever they are found in Canada (including private land) other than those individuals in or on federal lands administered by the Parks Canada Agency. In that capacity, the Minister of Fisheries and Oceans has powers and duties with respect to protecting aquatic species listed as endangered, threatened or extirpated on Schedule 1 under that Act and providing for their recovery. The Species at Risk Act makes it an offence to:

- kill, harm, harass, capture or take an individual of a species that is listed as extirpated, endangered or threatened (subsection 32(1));
- possess, collect, buy, sell or trade an individual of a species that is listed as extirpated, endangered or threatened, or any of its parts or derivatives (subsection 32(2));
- damage or destroy the residence of one or more individuals of a species that is listed as endangered or threatened, or of a species listed as extirpated if a recovery strategy has recommended its reintroduction into the wild in Canada (section 33); and,
- destroy critical habitat (subsection 58(1)).

These prohibitions only apply in relation to species listed on Schedule 1 of SARA as endangered, threatened or extirpated.

The FFHPP conducts integrated regulatory reviews of WUAs under the Fisheries Act and SARA. When necessary, SARA conditions are incorporated into Fisheries Act authorizations (under paragraph 34.4 (2)(b) and 35(2)(b)), letters of advice or stand-alone SARA permits.

## 2.3. Aquatic Invasive Species

The *Aquatic Invasive Species Regulations* (AISR) came into force in 2015 establishing a national framework to protect fish, fish habitat, and the use of fish from the threat of aquatic invasive species (AIS). DFO can control AIS using four methods, by:

- a) authorizing, under the Regulations, the deposit of a prescribed deleterious substance in a body of water frequented by fish where the target species is an AIS and may harm fish, fish habitat, or the use of fish;
- b) licencing fishing of an AIS, under the Regulations;
- c) directing people, under the Regulations, in possession of a listed AIS or in charge of a carrier transporting an AIS to destroy them, establish a temporary barrier around the AIS and post signs or markers to prohibit access around AIS, carrier, conveyance or structure; and,

- d) authorizing a WUA for the purpose of preventing the spread or introduction of an AIS, including with respect to its habitat under the fish and fish habitat protection provisions of the *Fisheries Act*.

FFHPP will work in collaboration with the National Aquatic Invasive Program to ensure that the threat posed by AIS present where WUAs are proposed is effectively managed.

### 3.0. Key Terms and Definitions

The following terms will help FFHPP staff understand the risk management approach:

**Affected Area:** The area within which all of the proposed WUAs (including footprint) and related pressures are likely to occur either directly or indirectly.

**Aggregation:** Areas where: a) most individuals of a species are aggregated for some part of the year; or b) most individuals use the area for some function in their life history, or c) some structural feature or ecological process occurs with exceptionally high density (DFO 2004).

**Avoid:** Actions taken to prevent harmful impacts to fish and fish habitat.

**Fish:** Includes the following: a) parts of fish; b) shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals; and, c) The eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans or marine animals. Subsection 2(1) of the *Fisheries Act*.

**Fish Habitat:** Means water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas. Subsection 2(1) of the *Fisheries Act*.

**Habitat Component:** Habitat components are the structural features (biotic or abiotic) that provide the requisite habitat characteristics (flow, cover, substrate, depth, oxygen, vegetation, etc.) required to meet the life processes of fish. Habitat components are defined based on the nature of the affected habitat (e.g. freshwater or marine), the fish species present, their life processes and habitat requirements.

**Habitat Function:** The life processes of fish. For example: spawning; rearing; nursing; feeding; migrating. In the risk assessment process, habitat components are used as a proxy for habitat functions.

**Habitat Rarity:** The relative prevalence of the habitat in the affected area. It is considered according to the functional properties of an area, which can include ecological functions (e.g., nursery and rearing habitat), physical features (e.g., topography), structural habitat features (e.g., macrophyte beds) and biodiversity (e.g., endangered or threatened species or highly diverse communities).

**Habitat Resiliency:** The ability of a habitat component or habitat function to return to a previous, less perturbed state following a perturbation (DFO 2012). Habitat resiliency can range from areas where the habitat structures or species are highly sensitive, easily perturbed, and slow to recover to areas where the habitat structures or species are robust, resistant to perturbation, or readily return to the pre-perturbation state (DFO 2004).

**Harmful alteration, disruption or destruction:** Any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes of fish.

**Impact:** Change to a habitat component caused by a WUA through one or more pressures.

**Mitigate:** Actions taken to reduce the spatial scale, duration, or intensity of harmful impacts to fish and fish habitat that cannot be avoided.

**Offsetting:** Actions taken to provide measurable conservation and protection outcomes for fish and fish habitat that can reasonably be expected to counterbalance the residual adverse impacts on fish and fish habitat in one location with proportionate fish and fish habitat benefits at the same or other location.

**Persistence:** Persistence is defined as the length of time that is needed for any given pressure to disappear. It starts from the time the WUA begins to change a habitat component impacts, to the time it may take for the resulting change to the habitat component to recover (Borgwardt et al. 2019).

**Precautionary Approach (PA):** In resource management, the PA is, in general, about being cautious when scientific information is uncertain, unreliable or inadequate and not using the absence of adequate scientific information as a reason to postpone or fail to take action. (SAR CSAS 2006/023) The Federal Government has developed a document entitled "A Framework for the Application of Precaution in Science-based Decision Making about Risk" (Privy Council Office, 2003). This paper addresses the application of precaution in its various forms - "precaution", "the Precautionary Principle" or "the precautionary approach" - all of which have three basic components: the need for a decision; a risk of serious or irreversible harm; and a lack of full scientific certainty.

**Pathways of Effects (POE):** A representation of cause-and-effect relationships between human activities, their associated sources of effects (pressures), and their impact on specific habitat components. The POE models illustrate potential cause-effect relationships and identify the mechanisms by which pressures ultimately lead to changes in the ecosystem (DFO 2015).

**Pressure:** Synonymous with POE Endpoint and Stressor. A pressure is defined as the manner in which a human activity changes (positively or negatively) the state of a habitat component (DFO 2015).

**Recovery:** Refers to the natural processes of ecological recovery. Lag time may occur such that the habitat component may follow a different path during recovery than during loss. However, recovery does not include artificial rehabilitation of degraded habitats or artificial enhancement (DFO 2015).

**Residual Impact:** Any temporarily or permanently change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes of fish.

**Spatial Extent:** The spatial extent is the physical overlap of the affected area with the area occupied by the habitat component (Borgwardt et al. 2019).

Standardized General Avoidance and Mitigation Measures (Annex 1): A national FFHPP list of streamlined avoidance and mitigation measures developed using a standardized methodology which:

- ensures clear instructions for proponents to follow; and
- improves FFHPP's ability to monitor compliance with the measures and assess their effectiveness.

Note: The standardized general avoidance measures are the same as the Fish and Fish Habitat Protection Measures on the Projects Near Water website. The standardized general mitigation measures are used in the development of Codes of Practice, which are also found on the Projects Near Water website.

## 4.0. Risk Assessment (Identification, Analysis and Evaluation)

### 4.1. Triage

Requests for review received by FFHPP will be triaged using a science-based approach that focusses on:

- the application of the Pathways of Effects related to the proposed WUAs;
- the identification of potential pressures placed on the fish and fish habitat in the affected area; and,
- the application of standardized general avoidance and mitigation measures used to manage these potential pressures.

When reviewing Requests for Review, triage biologists will ensure that requests are complete and provide sufficient information in order to identify and document the:

- WUAs associated with the proposed project;
- sensitivity of the fish species and habitat being affected , including the presence of aquatic species at risk, their critical habitat and/or their residences;
- presence of aquatic invasive species;
- relevant Pathways of Effects for each WUA;
- potential pressures (i.e. POE endpoints), using the **Pathways and Pressures Table (Table 1)**;
- **Standardized General Avoidance and Mitigation Measures (Annex 1)** (used to break the links in the **Pathways of Effects (Annex 2)**); and,
- potential pressures not addressed by the standardized general measures.

Using the Pathways of Effects identified (by the proponent in the Request for Review Form and/or supplemented by the practitioner), triage biologists will use Table 1 to identify the pressures associated with the WUAs of a proposal (yellow boxes). A list of general standardized avoidance and mitigation measures categorized by pressure is provided in Annex 1. A clear distinction has been established between what is an avoidance measure and what is a mitigation measure. Triage biologists will review

the list of measures and determine whether the links in the relevant pathways can be completely broken using the standardized general avoidance and mitigation measures. The links in the Pathways of Effects diagrams in Annex 2 have been coded to the relevant standardized avoidance and mitigation measures to assist triage staff. If the links can be broken using the general measures, triage biologists will follow the steps in the FFHPP Regulatory Review Process Map (FA, SARA, AIS) (coming soon) and draft a Letter C (i.e. letter of advice) with the relevant standardized avoidance and mitigation measures. Sections 1 and 2 of the Risk Documentation Form will be completed and approved prior to issuing Letter C and the Triage Data Entry Protocol will be followed to ensure that all important referral information is tracked in the Program Activity Tracking for Habitat (PATH) database.

The guidance in the **Habitat Sensitivity Table (Table 2)** can be used by triage staff to assess the sensitivity of the fish and fish habitat in question. In addition, the Project Specific Guidance for Aquatic Species at Risk regional tables were developed to help triage biologists determine if a regulatory review is required when an aquatic species at risk, its critical habitat, and/or its residence has the potential to be affected by the WUA. Triage biologists will continue to refer to these tables to help them determine whether the standardized general avoidance and mitigation measures are sufficient for managing the pressures associated with the proposed WUAs, or whether additional site-specific measures are required in order to protect the species, its critical habitat and/or its residence. In cases when additional site-specific measures are required, the proposal will be referred for regulatory review.

**Table 1: Pathways and Pressures.**

Pathways vs. *Pressures	Changes or loss of riparian zone	Change or loss of aquatic habitat and vegetation	Change or loss of fish passage	Sedimentation	Deleterious substances	**Change in food supply, noise, light, dissolved oxygen, nutrient and/or electromagnetic field	Fish mortality
<b>Land-based activities</b>							
Cleaning or maintenance of bridge or other structures	N/A	N/A	N/A			N/A	N/A
Excavation		N/A	N/A		N/A	NSM	N/A
Grading			N/A		N/A	N/A	N/A
Riparian planting			N/A			NSM	N/A
Streamside livestock grazing					N/A	NSM	
Use of explosives		N/A	N/A			NSM	
Use of industrial equipment on land		N/A	N/A			N/A	
Vegetation clearing			N/A			NSM	N/A
<b>In-water activities</b>							
Addition or removal of aquatic vegetation	N/A		N/A			NSM	N/A
Change in timing, duration and frequency of flow	N/A					NSM	N/A
Dredging			N/A			NSM	N/A
Fish passage issues	N/A	N/A		N/A	N/A	NSM	
Marine seismic surveys	N/A	N/A		N/A	N/A	N/A	
Organic debris management			N/A			NSM	N/A
Placement of material or structures in water	N/A		N/A		N/A	NSM	
Structure removal	N/A		N/A			NSM	N/A
Use of explosives			N/A			N/A	
Use of industrial equipment		N/A	N/A			N/A	
Wastewater management	N/A	N/A		N/A		NSM	N/A
Water extraction	N/A				N/A	NSM	

\*\*Standardized general avoidance and mitigation measures do not exist for these pressures, therefore a regulatory review is required.



Pressures associated with individual pathways/activities, standardized measures in Annex 1 (\*DFO 2014)



No standardized measures (NSM) available for these pressures

Triage biologists will refer the entire proposal to the regulatory review unit once it is determined that:

- 1- the potential pressures associated with the proposal cannot be avoided or mitigated using the list of standardized general measures;
- 2- a site visit and/or site specific measures are required;
- 3- the potential pressures include change in food supply, noise, light, dissolved oxygen, nutrients and/or electromagnetic fields;
- 4- the project targets aquatic invasive species and there are related impacts under s. 34.4 and 35 of the *Fisheries Act*; or
- 5- the project involves prohibited effects on aquatic species at risk that cannot be avoided or mitigated using the standardized general measures.

The FFHPP Regulatory Review Process Map (FA, SARA, AIS) should be followed to determine the appropriate course of action.

#### 4.2 Regulatory Review

Once a referral has been triaged in and sent to the appropriate regulatory review unit, regulatory review biologists will review the details in the Risk Documentation Form provided (sections 1 and 2), which will include:

- information on the proposed WUAs (i.e., size of the affected area including footprint) and the fish and fish habitat affected (including aquatic Species at Risk);
- a list of standardized general avoidance and mitigation measures for the proposed WUAs; and,
- a list of pressures not managed by the standardized avoidance and mitigation measures.

For proposals with Aquatic Invasive Species or Species at Risk implications, regulatory review biologists will consult a biologist in the Aquatic Invasive Species National Core Program and/or the Species at Risk Program following the process described in the FFHPP Regulatory Review Process Map (FA, SARA, AIS).

The regulatory review biologist will work with the proponent to ensure that adequate site-specific avoidance and mitigation measures are included in the proposed design using the Pathways of Effects. Pressures not managed by standardized or site-specific avoidance and mitigation measures will be the basis for the risk evaluation (section 3c). The impact being evaluated is the sum of the pressures that cannot be managed using standardized and site-specific avoidance and mitigation measures.

The magnitude of the impact will be determined by considering:

- the habitat components being affected;
- the spatial extent of the area affected by the WUA relative to the habitat components in the area;
- the sensitivity of the habitat being affected; and,
- the expected persistence of the pressures.

This evaluation will be done in the context of the aquatic ecosystem, considering the habitat components (e.g. substrate, aquatic vegetation, flow, water depth, oxygen, etc.) that support the habitat functions (i.e. spawning, rearing, nursing, feeding, migrating) of the relevant fish species and will



depend on the nature of the affected habitat (freshwater/marine), the fish species present, their life history and related habitat requirements. The following steps describe the risk assessment process to be followed.

#### 4.2.1. Step 1 - Identifying Habitat Components

Habitat components are the structural features that support the requisite habitat functions required to meet the life processes of fish (e.g. spawning, rearing, nursing, feeding, migrating). For the purpose of assessing risk, habitat components are used as a proxy for habitat functions. **The Habitat Components table (Table 2)** provides examples of habitat components by habitat function. (Note: This table will be developed further over time.)

Regulatory review biologists will identify all habitat components affected by the WUA(s) and will focus their assessment on the habitat component that is most significant with respect to the species using the habitat (e.g. spawning gravel for brook trout). Where multiple components are significant to the species using the habitat, there may be a need to conduct a risk assessment on multiple habitat components.

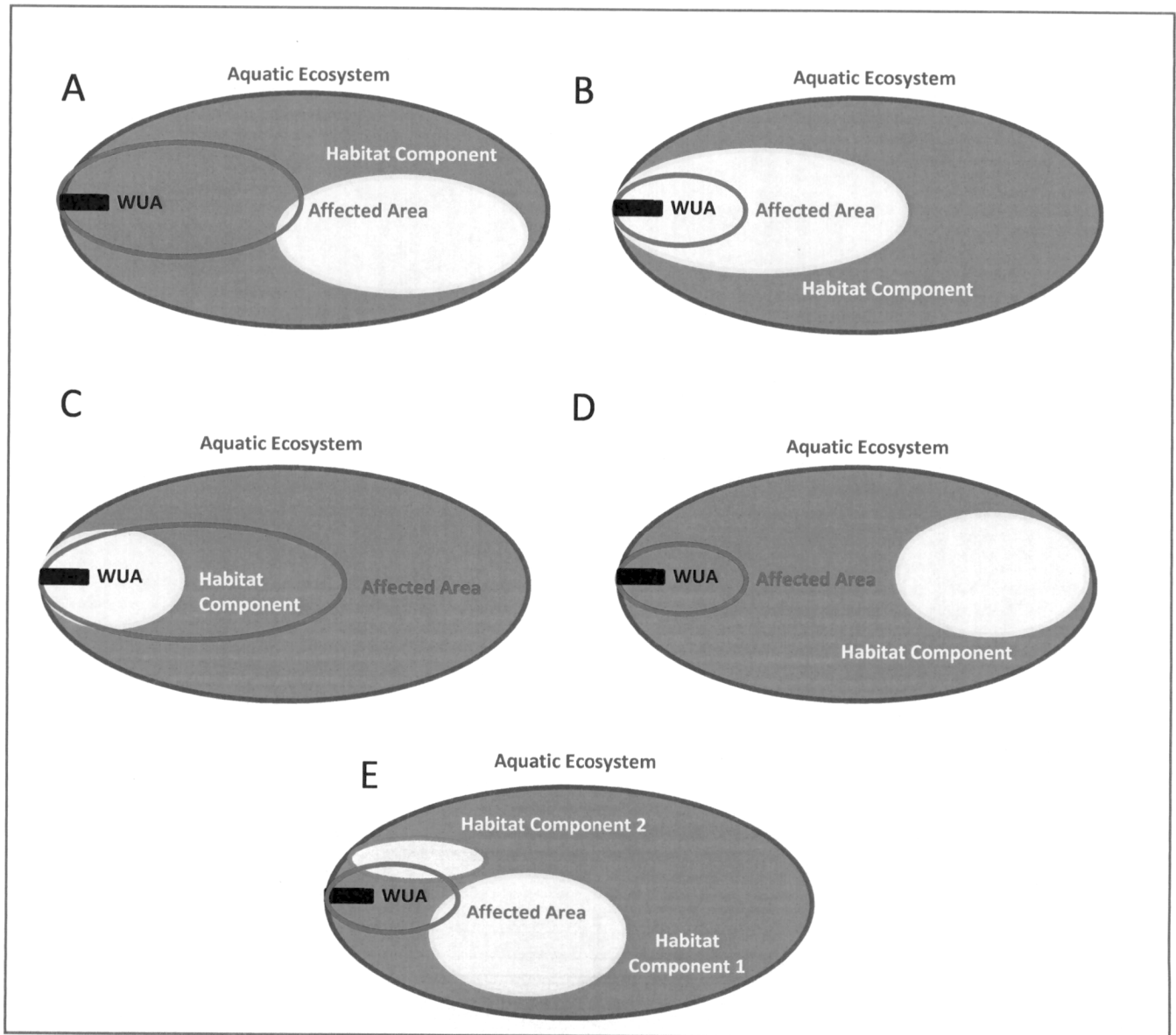
**Table 2:** Examples of habitat components by habitat function.

Function	Components
Spawning	<ul style="list-style-type: none"> <li>• Streams containing pool and riffle habitats</li> <li>• Meander belt</li> <li>• Gravel dominated shallow bottoms</li> <li>• Perennial groundwater upwellings</li> <li>• Moderate current with turbulence that promotes good oxygenation</li> </ul>
Nursery	<ul style="list-style-type: none"> <li>• Shallow shoreline pools</li> <li>• High salinity gradient</li> <li>• Thermal front area</li> </ul>
Rearing	<ul style="list-style-type: none"> <li>• Marine habitat with waters between 3.3°C and 13.3 °C and shallower than 15 m depth</li> <li>• Deeper pools</li> </ul>
Food Supply	<ul style="list-style-type: none"> <li>• Riparian zone</li> <li>• Pools, riffles, runs, lakes (adfluvial)</li> </ul>
Migration	<ul style="list-style-type: none"> <li>• Free flowing rivers (i.e. no barriers to fish passage like dams, culverts or low water levels)</li> </ul>

#### 4.2.2. Step 2 - Spatial Extent

Spatial extent is defined as the overlap of the affected area with the area of the habitat component. The affected area is the area within which all of the proposed WUAs and related pressures are likely to occur either directly or indirectly.

Once the primary habitat component(s) is selected, a rough estimation of it's geographical extent (i.e. area) will be made in order to approximate the percentage that is located within the affected area. Referral information, aerial photographs, site visits and dialogue with the proponent (among other things) can be used to make a general estimate of the portion of the habitat component that is within the affected area of the project. **Figure 2** illustrates five different scenarios.



**Figure 2:** A) affected area overlaps with habitat component by up to 5%. B) affected area overlaps with habitat component by 5-50%, C) affected area overlaps with the habitat component by 50-100%, D) affected area does not overlap with the habitat component, and E) multiple habitat components.

The scale at which habitat components are considered for this estimation will vary depending on the habitat component, the species affected and the circumstances of the proposed WUA(s). Footprint, timing, pressures, habitat sensitivity, fish biology and site conditions are all factors that could be considered for this assessment. As a general rule, regulatory review biologists should use a precautionary approach and default to the smallest possible geographic unit when deciding the appropriate scale of the habitat component to consider (e.g. stream reach, bay of a lake, inner harbour). The scale used for the risk assessment will depend on the scale and scope of the WUA's and associated pressures. In other words, are they within a small stream reach, cove, lake, or coastal area, or are they within a larger setting?

There are three categories of spatial extent: Site, Local and Widespread. The **Spatial Extent Table (Table 3)** provides examples for each of these categories.

**Table 3: Spatial Extent.**

Site	Local	Widespread
The affected area overlaps with the habitat component by up to 5% of the area occupied by the habitat component.	The affected area overlaps with the habitat component by between 5 and 50% of the area occupied by the habitat component.	The affected area overlaps with the habitat component by between 50 and 100% of the area occupied by the habitat component.
The affected area overlaps a minor or negligible portion of the habitat component.	The affected area overlaps a portion of the area occupied by the habitat component.	The affected area overlaps much of the area occupied by the habitat component.

#### 4.2.3. Step 3 - Habitat Sensitivity

Habitat (and fish species) sensitivity is a critical element to consider when assessing the risk that the temporary or permanent change to fish habitat resulting from a WUA is likely to directly or indirectly impair the habitat's capacity to support one or more life processes of fish. Regulatory review biologists will determine whether the habitat affected by the WUA is of Low, Moderate or High sensitivity.

The **Habitat Sensitivity Table (Table 4)** provides key considerations for characterizing the habitat affected by the WUA(s). This list will be improved and updated over the coming months, however regional examples identified in previous guidance can be referred to for the purpose of characterizing habitat sensitivity.

The Project Specific Guidance for Aquatic Species at Risk regional tables and the Species at Risk public registry (including recovery strategies and management plans) should also be reviewed when assessing habitat sensitivity and Species at Risk Program staff should also be consulted, when appropriate/required.

It is recognized that similar habitats may be characterized differently among regions based on regional expertise and judgement, watershed plans, fisheries management objectives and scientific studies, all of which should be considered when determining the sensitivity of the habitat.

**Table 4: Habitat Sensitivity**

	<b>Low Sensitivity</b>	<b>Moderate Sensitivity</b>	<b>High Sensitivity</b>
<b>Species Resiliency</b>	Species present are resilient to change and perturbation.	Species present are moderately resilient to change and perturbation.	Species present are highly sensitive to perturbations.
<b>Species Dependence on Habitat</b>	Habitat not used by fish for any life stage except occasionally transiting through or feeding in the area.  Habitat characteristics used in a generalist way by fish.	Habitat is suitable and may be used as migratory corridor, rearing or spawning habitat.  Habitat characteristics used in a variable way by fish.	Habitat is limited and the fish are dependent upon it for survival of the species (e.g. groundwater upwelling zone supporting spawning habitat or deep pools providing the only overwintering habitat).  Habitat characteristics used in a specific way by fish.
<b>Habitat Rarity</b>	Habitat is prevalent and widespread with many areas that are similar in features.	Habitat is neither widespread or unique, rare or distinct.	Habitat is unique, rare and distinct.
<b>Habitat Resiliency</b>	The habitat is robust, resistant to perturbation, or rapidly recovers.	The habitat is neither robust nor sensitive, is somewhat resistant to perturbation and recovers at a moderate rate.	The habitat is highly sensitive, easily perturbed, and slow to recover.
<b>Aggregation</b>	Habitat does not support a specific function, fish densities typically low.	Habitat supports a minimum of one function, fish densities periodically high.	Habitat supports more than one function, fish densities frequently high.
<b>Habitat Contribution to Fisheries Productivity (DFO 2013)</b>	Habitat's contribution to fisheries productivity is low.  Large amounts of change to the affected species or habitat is expected to have relatively low impacts on fisheries productivity.	Habitat's contribution to fisheries productivity is moderate.  Amount of change to the affected species or habitat is proportional to impacts on fisheries productivity (small change/small impacts; large change/large impacts).	Habitat's contribution to fisheries productivity is high.  Small amounts of change to the affected species or habitat is expected to have relatively large impacts on fisheries productivity.
<b>Abiotic and Biotic Suitability of Habitat</b>	No key structure –providing species (abiotic) in area of WUA.	Key structure providing species is present in location of the WUA but is not a limiting component.	Key structure providing species present in location of WUA and is a limiting component.
<b>Species at Risk</b>	Not within distribution area of a listed aquatic species at risk.	Within distribution area of an aquatic species at risk, but not critical habitat.  Non-critical habitat of aquatic species at risk that supports their lifecycle functions within their distribution area.	Critical Habitat and/or residence of aquatic species at risk identified in the proposed or final Recovery Strategy or Action Plan.  Habitat supporting species of special concern.

#### 4.2.4. Step 4 - Persistence of Pressures

Persistence is defined as the length of time that is needed for any given pressure to disappear. It starts from the time the WUA begins to change a habitat component impacts, to the time it may take for the resulting change to the habitat component to recover. The resilience of the habitat in question is an important consideration when assessing the persistence of a pressure. For example, if the WUA will likely result in a change or loss of aquatic vegetation, the persistence of this pressure would only disappear once the aquatic vegetation has recovered. The regulatory review biologist will select the appropriate level of persistence from the following three categories:

- low (weeks);
- moderate (months); and,
- high (more than 1 year).

#### 4.2.5 Step 5 - Matrices

Regulatory review biologists will plot the persistence and spatial extent of the impact on the appropriate habitat sensitivity matrix (Annex 3). The matrix for the most sensitive habitat identified in the affected area should be used. The program's risk tolerance (represented by the line between red and green on the matrices) delineates between when a non-regulatory instrument (i.e. Letter of Advice) is expected to sufficiently manage the impact associated with the WUA and where a residual impact is expected to occur which should be managed using a regulatory instrument (i.e. authorization).

- If the persistence and spatial extent of the impact falls in the green zone, the regulatory review biologist will recommend that a non-regulatory instrument be issued in the Risk Documentation Form.
- If the persistence and spatial extent of the impact fall in the red zone (i.e. residual impact), the regulatory review biologist will recommend that a regulatory instrument be considered in the Risk Documentation Form.
- In cases where the combination of persistence and spatial extent fall in a box that is both red and green, biologists will be required to document a rationale in the Risk Documentation Form supporting their recommendation to issue a non-regulatory instrument or consider a regulatory instrument. The rationale provided should be based on all of the elements considered in the risk assessment.

### 5.0. Risk Treatment

Regulatory review biologists will conclude the risk assessment by completing the Risk Documentation Form and recommending a risk treatment for the proposed WUA (i.e., regulatory or non-regulatory instrument) to senior management for review and approval. At present, non-regulatory instruments include:

- the Measures to Protect Fish and Fish Habitat on the Projects Near Water website;
- standards and codes of practice (also on the Projects Near Water website); and,
- letter C (i.e. letter of advice).

And regulatory instruments consist of:

- Ministerial authorizations (including Class Authorizations in some regions).

In addition to the issuance of Ministerial authorizations, the *Fisheries Act* provides authorities to create other exceptions that would allow proponents to carry on WUAs without contravening the death of fish or the harmful alteration, disruption or destruction of fish habitat prohibitions. These include:

- Prescribed Works and Waters Regulations;
- Designated Projects Regulations and associated permits; and,
- Ecologically Significant Areas (ESA) Regulations.

These instruments have not yet been developed. The Risk Management Guide will be updated as they become available.

Once the risk has been assessed and the recommended risk treatment, supporting rationale and list of avoidance and mitigation measures have been documented and approved in the Risk Documentation Form, the regulatory review biologist will:

- issue a Letter of Advice which includes all relevant avoidance and mitigation measures; or
- request that the proponent complete an Application for Authorization.

The Regulatory Review Data Entry protocol (coming soon) will also be followed to ensure that all information pertaining to the project is captured for tracking and reporting purposes.

## 6.0. Communication, Engagement and Consultation

Transparency in decision-making and clear processes for proponents to follow are key elements of a risk management approach. Engagement with internal and external stakeholders and partners will be undertaken following the interim testing period to ensure that FFHPP's approach to risk management is well understood and that needs and expectations of the different parties are considered.

In future, proponent guidance for submitting requests for review (including the Request for Review Form) will be updated to align with the risk management process. This will help to ensure that the information provided is sufficient for staff to make informed risk-based decisions.

## 7.0. Monitoring, Compliance and Continuous Improvement

### 7.1. Monitoring

Monitoring the effectiveness of the measures used to manage risk is essential to ensure that the conservation and protection of fish and fish habitat is being achieved. FFHPP will work with science and regional monitoring teams in future to build on the current effectiveness monitoring approach.

### 7.2. Compliance

A risk-based approach to compliance management can be developed following the same principles being applied to referral review. Opportunities to adapt this approach for the purposes of compliance management will be explored in the future.

### 7.3. Continuous Improvement

The Interim FFHPP Risk Management Guide will be refined and improved over time. Science advice is being sought (and some is already underway) to help build on several concepts presented including Pathways of effect and pressures, habitat components, spatial extent, persistence, habitat sensitivity, risk evaluation criteria and effectiveness monitoring. In addition, modernized tools to support efficient and effective risk assessment, documentation and reporting are being explored. Feedback from regions, including monitoring results, will contribute to the advancement of FFHPP science and the risk management process in general.

## References

Borgwardt, F., L. Robinson, D. Trauner, H. Teixeira, A.J.A. Nogueira, A.I. Lillebo, G. Piet, M. Kuemmerlen, T. O'Higgins, H. McDonald, J. Aravelo-Torres, A.L. Barbosa, A. Iglesias-Campos, T. Hein, and F. Culhane. Exploring variability in environmental impact risk from human activities across aquatic ecosystems. 2019. *Science of the Total Environment*, 652: 1396-1408.

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## Annex 1 – FFHPP Standardized General Avoidance and Mitigation Measures

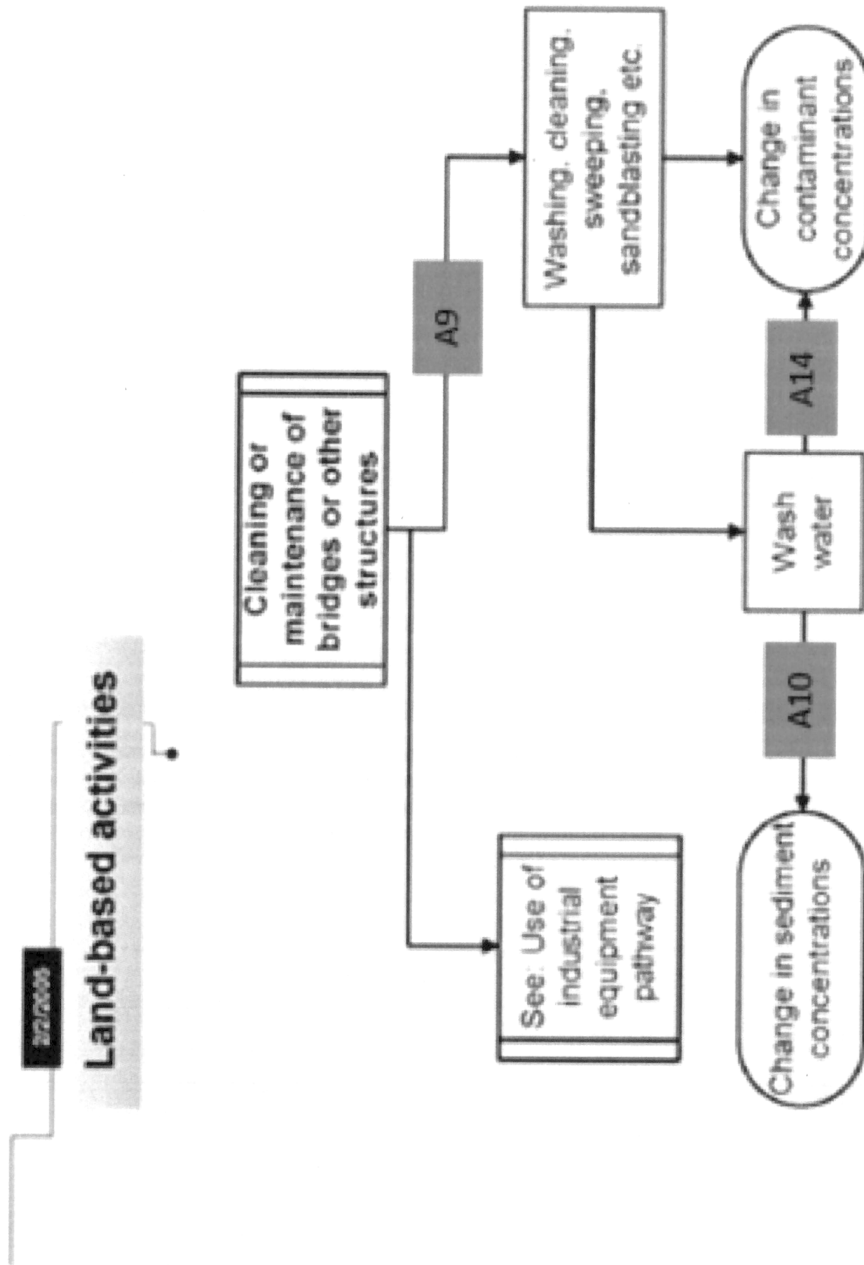
<b>Pressure: Death of fish</b>	
Avoidance measure	
• Avoid kill fish by means other than fishing	A1
• Avoid using explosives in or near water	A2
Mitigation measure	
• Plan in-water works, undertakings and activities to respect <u>timing windows</u> to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed and migrate	M1
• Capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas <ul style="list-style-type: none"> <li>○ Dewater gradually to reduce the potential for stranding fish</li> <li>○ Use code of practice for dewatering and fish rescue (in development)</li> </ul>	M2
• Screen intake pipes to prevent entrainment or impingement of fish <ul style="list-style-type: none"> <li>○ Use the code of practice for water intake screens</li> </ul>	M3
• Limit the impacts to fish in the use of explosives to the footprint of the works, undertaking or activity	M4
<b>Pressure: Change in riparian zone</b>	
Avoidance measures	
• Maintain an undisturbed vegetated riparian zone between areas of on-land activity and the High Water Mark of any water body <ul style="list-style-type: none"> <li>○ Use existing trails, roads or cut lines wherever possible</li> <li>○ Avoid tree removal</li> <li>○ Use methods to prevent substrate compaction (e.g., swamp mats, pads)</li> </ul>	A3
Mitigation measures	
• Limit impacts on riparian vegetation to those approved for the work, undertaking or activity <ul style="list-style-type: none"> <li>○ Limit access to banks or areas adjacent to waterbodies</li> <li>○ Prune or top the vegetation instead of grubbing/uprooting</li> <li>○ Limit grubbing on watercourse banks to the area required for the footprint of works, undertaking or activity</li> <li>○ Construct access points and approaches perpendicular to the watercourse or waterbody</li> <li>○ Remove vegetation or species selectively and in phases</li> <li>○ Re-vegetate the disturbed area with native species suitable for the site</li> </ul>	M5
<b>Pressure: Change or loss of aquatic habitat and vegetation</b>	
Avoidance measures	
• Avoid conducting any work, undertaking or activity in water	A4
• Avoid placing fill or other temporary or permanent structures below the High Water Mark	A5
• Avoid fording of the watercourse	A6

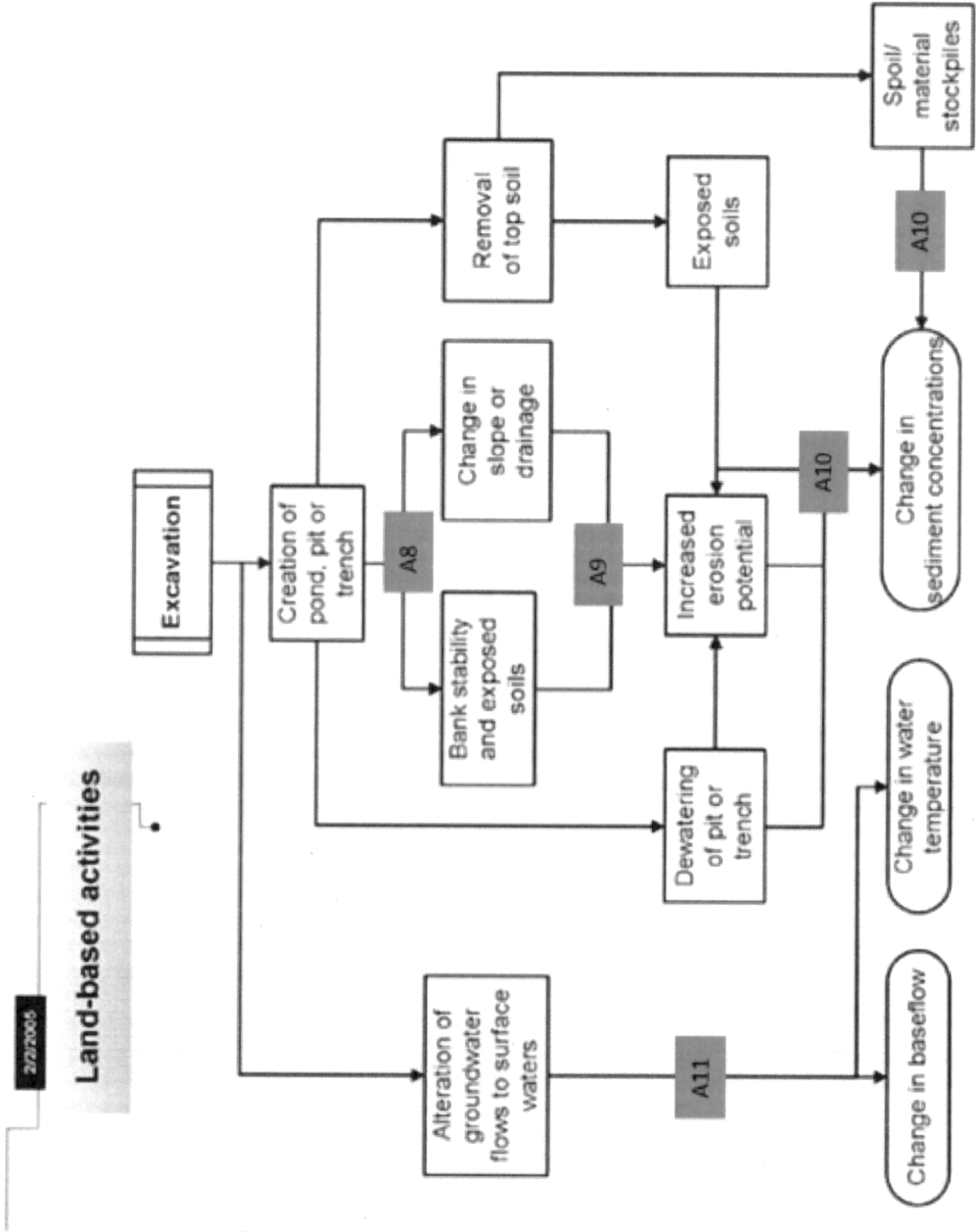
<ul style="list-style-type: none"> <li>Avoid disturbing or removing aquatic vegetation, natural wood debris, rocks, sand or other materials from the banks, shoreline or the bed of the waterbody</li> </ul>	A7
<ul style="list-style-type: none"> <li>Avoid building structures in areas that are inherently unstable (e.g., meanders, bends braided streams, alluvial fans, floodplains) and may result in erosion and/or scouring of the stream bed or banks</li> </ul>	A8
<b>Mitigation measures</b>	
<ul style="list-style-type: none"> <li>No temporary or permanent increase in existing footprint below the high water mark</li> </ul>	M6
<ul style="list-style-type: none"> <li>Salvage, reinstate or match habitat structure (e.g., large wood debris, boulders, instream aquatic vegetation/substrate) to its initial state</li> </ul>	M7
<ul style="list-style-type: none"> <li>Restore stream geomorphology (i.e., restore the bed and banks, gradient and contour of the waterbody) to its initial state</li> </ul>	M8
<ul style="list-style-type: none"> <li>Replace/restore any other disturbed habitat features and remediate any areas impacted by the work, undertaking or activity</li> </ul>	M9
<ul style="list-style-type: none"> <li>Conduct in-water undertakings and activities during periods of low flow, or at low tide</li> </ul>	M10
<ul style="list-style-type: none"> <li>Limit the duration of in-water works, undertakings and activities so that it does not diminish the ability of fish to carry out one or more of their life processes (spawning, rearing, feeding, migrating)</li> </ul>	M11
<ul style="list-style-type: none"> <li>Maintain an appropriate depth and flow (i.e., base flow and seasonal flow of water) for the protection of fish and fish habitat                             <ul style="list-style-type: none"> <li>Use the code of practice for water withdrawal (in development)</li> </ul> </li> </ul>	M12
	M12.1
<b>Pressure: Sedimentation of fish habitat</b>	
<b>Avoidance measures</b>	
<ul style="list-style-type: none"> <li>Avoid introducing sediments (e.g., silts, clays and sand) in the water</li> </ul>	A9
<ul style="list-style-type: none"> <li>Develop and implement an erosion and sediment control plan avoid the introduction of sediment into any waterbody during all phases of the work, undertaking or activity                             <ul style="list-style-type: none"> <li>Install effective erosion and sediment control measures prior to beginning work, undertaking or activity in order to stabilize all erodible and exposed areas</li> <li>Regularly inspect and maintain the erosion and sediment control measures and structures during all phases of the project</li> <li>Regularly monitor the watercourse for signs of sedimentation during all phases of the work, undertaking or activity and take corrective action</li> <li>Keep the erosion and sediment control measures in place until all disturbed ground has been permanently stabilized</li> <li>Remove all exposed non-biodegradable sediment control materials once site is stabilized</li> <li>Use biodegradable erosion and sediment control materials whenever possible</li> <li>Install settling basin and / or filtration systems for water flowing onto the site and water being pumped or diverted from the site</li> </ul> </li> </ul>	A10
	A10.1
	A10.2
	A10.3
	A10.4
	A10.5
	A10.6
	A10.7
	A10.7.1
	A10.7.2
	A10.8
	A10.9
	A10.10
	A10.11

<ul style="list-style-type: none"> <li>▪ Do not release runoff water until suspended sediment has resettled in settling basin and runoff water is clear</li> <li>▪ Dewater gradually to prevent sediment resuspension and bank destabilization</li> <li>○ Dispose of, and stabilize all excavated material above the High Water Mark or top of bank of nearby waterbodies and ensure sediment re-entry to the watercourse is prevented</li> <li>○ Schedule work to avoid wet, windy and rainy periods (and heed weather advisories) that may result in high flow volumes and/ or increase erosion and sedimentation</li> <li>○ Operate machinery on land in stable dry areas</li> <li>○ Install temporary clear span bridges to accommodate expected high water flows and to not damage erodible banks</li> </ul>	
<b>Mitigation measures</b>	
<ul style="list-style-type: none"> <li>• Develop and implement an Sediment Control Plan to minimize sedimentation of the waterbody during all phases of the work, undertaking or activity <ul style="list-style-type: none"> <li>○ Conduct all in-water works, undertakings or activities in isolation of open or flowing water to reduce the introduction of sediment into the watercourse <ul style="list-style-type: none"> <li>▪ Maintain the natural flow regime for any diversion works</li> <li>▪ Follow code of practice for dewatering and fish salvage (in development)</li> </ul> </li> <li>○ Schedule work to avoid wet, windy and rainy periods (and heed weather advisories)</li> <li>○ Inspect and maintain regularly the erosion and sediment control measures and structures during all phases of the project</li> <li>○ Use biodegradable sediment control materials should be used whenever possible</li> <li>○ Remove all exposed non-biodegradable sediment control materials once site has been stabilized</li> <li>○ Operate machinery on land, or from barges or on ice</li> <li>○ Use methods to prevent substrate compaction (e.g., swamp mats, pads)</li> <li>○ Monitor the watercourse to observe signs of sedimentation during all phases of the work, undertaking or activity and take corrective action</li> <li>○ Dispose and stabilize all dredged material above the high water mark of nearby waterbodies to prevent entry in the water</li> </ul> </li> </ul>	M13 M13.1 M13.1.1 M13.1.2 M13.2 M13.3 M13.4 M13.5 M13.6 M13.7 M13.8 M13.9
<b>Pressure: Change or loss of fish passage</b>	
<b>Avoidance measures</b>	
<ul style="list-style-type: none"> <li>• Avoid changing flow or water level</li> </ul>	A11
<ul style="list-style-type: none"> <li>• Avoid obstructing and interfering with the movement and migration of fish</li> </ul>	A12
<b>Mitigation measures</b>	
<ul style="list-style-type: none"> <li>• Maintain an appropriate depth and flow (i.e., base flow and seasonal flow of water) for the protection of fish and fish habitat</li> </ul>	M14

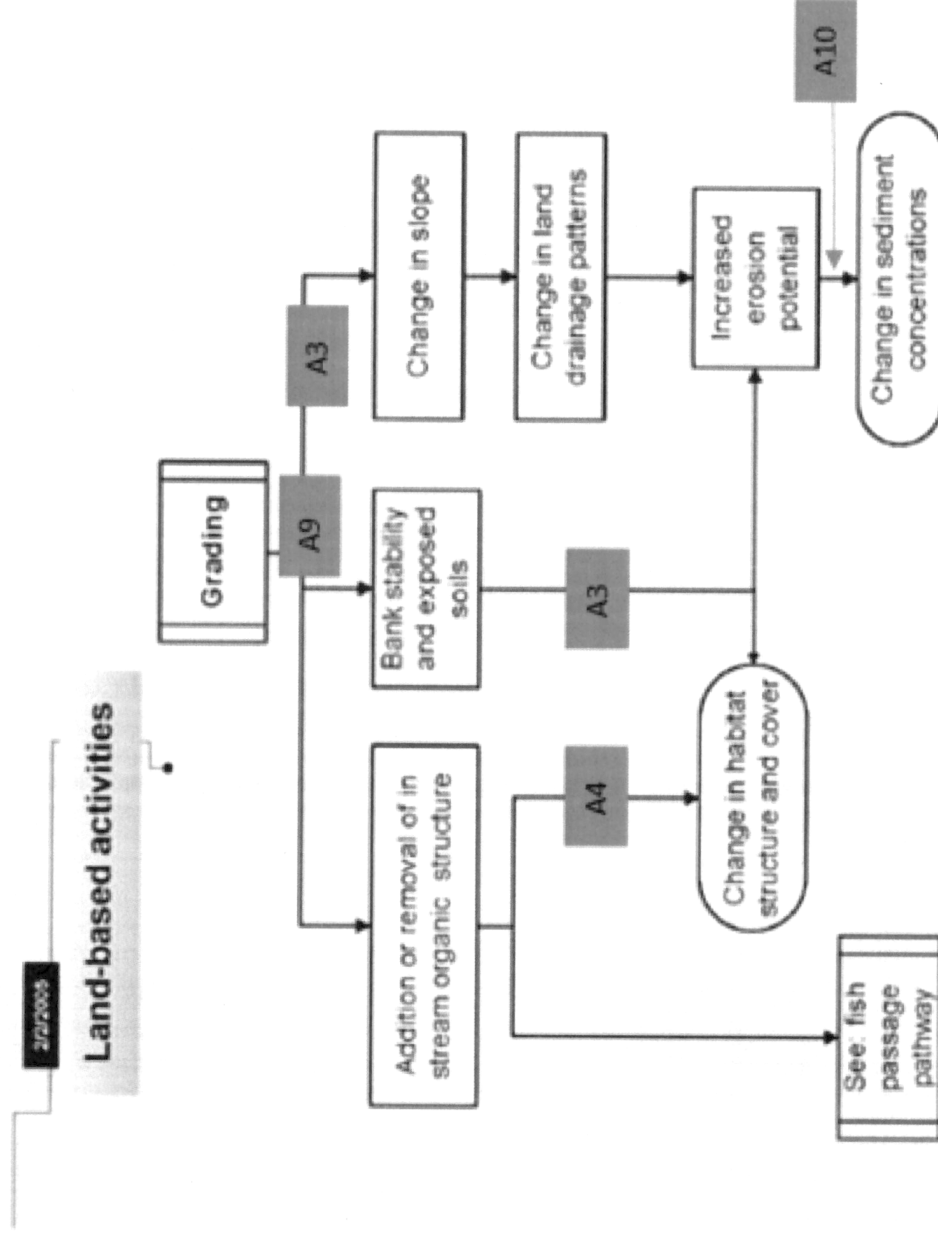
<b>Pressure: Deposit of deleterious substances</b>	
<b>Avoidance measures</b>	
<ul style="list-style-type: none"> <li>• Do not deposit any deleterious substances in the water course</li> </ul>	A13
<ul style="list-style-type: none"> <li>• Develop and implement a response plan to avoid a spill of deleterious substances               <ul style="list-style-type: none"> <li>○ Stop work, contain sediment-laden water and other deleterious substances and prevent their further migration into the watercourse</li> <li>○ Keep an emergency spill kit on site during the work, undertaking or activity</li> <li>○ Report any spills of sewage, oil, fuel or other deleterious material, whether near or directly into a water body</li> <li>○ Ensure clean-up measures are suitably applied so as not to result in further alteration of the bed and/or banks of the watercourse</li> <li>○ Clean-up and appropriately dispose of the sediment-laden water and deleterious substances</li> <li>○ Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, poured concrete or other chemicals do not enter the watercourse</li> <li>○ Maintain all machinery on site in a clean condition and free of fluid leaks</li> <li>○ Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water</li> <li>○ Dispose all construction, demolition or commercial logging materials waste above the high water mark of nearby waterbodies to prevent re-entry</li> </ul> </li> </ul>	A14

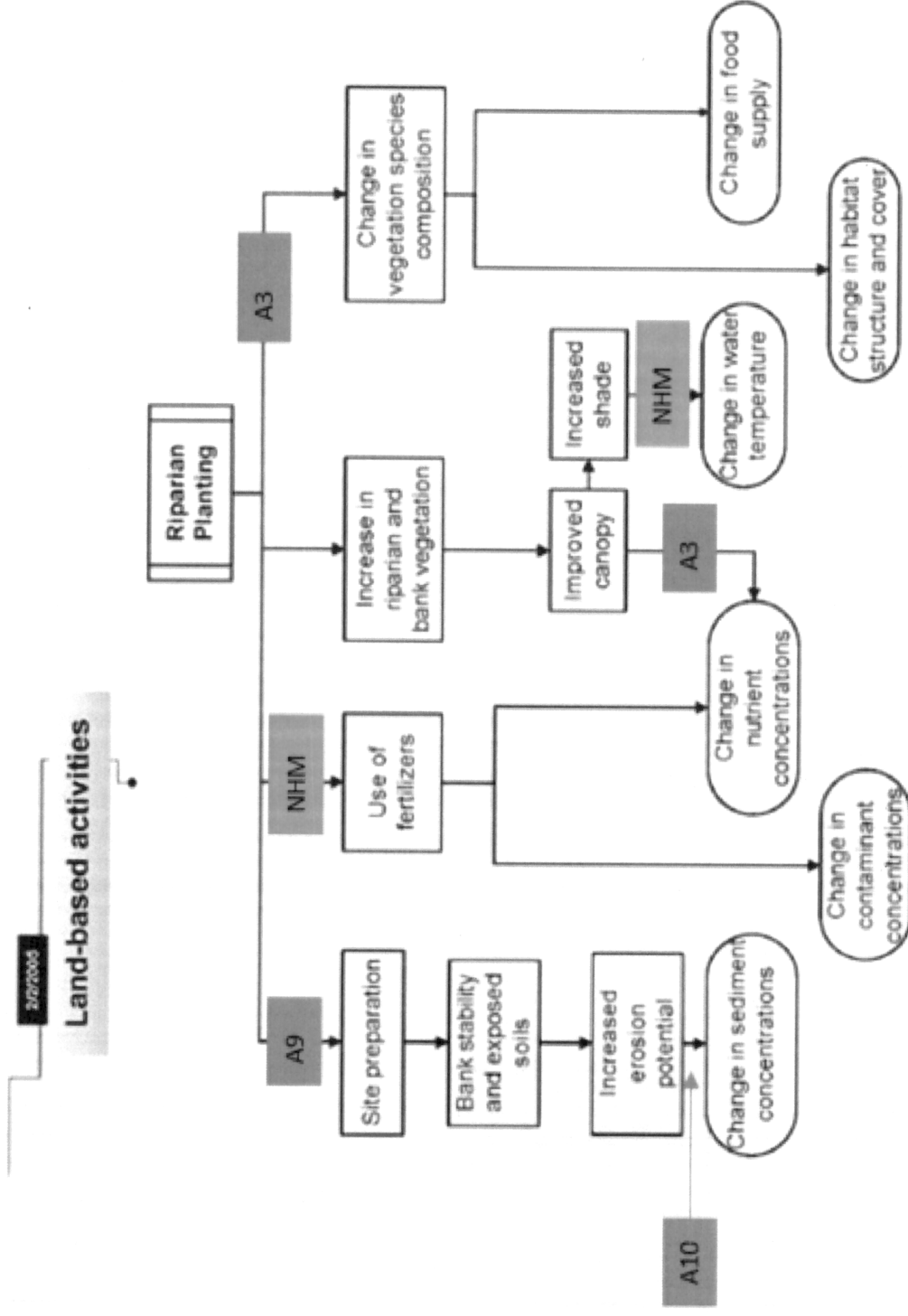
## Annex 2 – Pathways of Effects

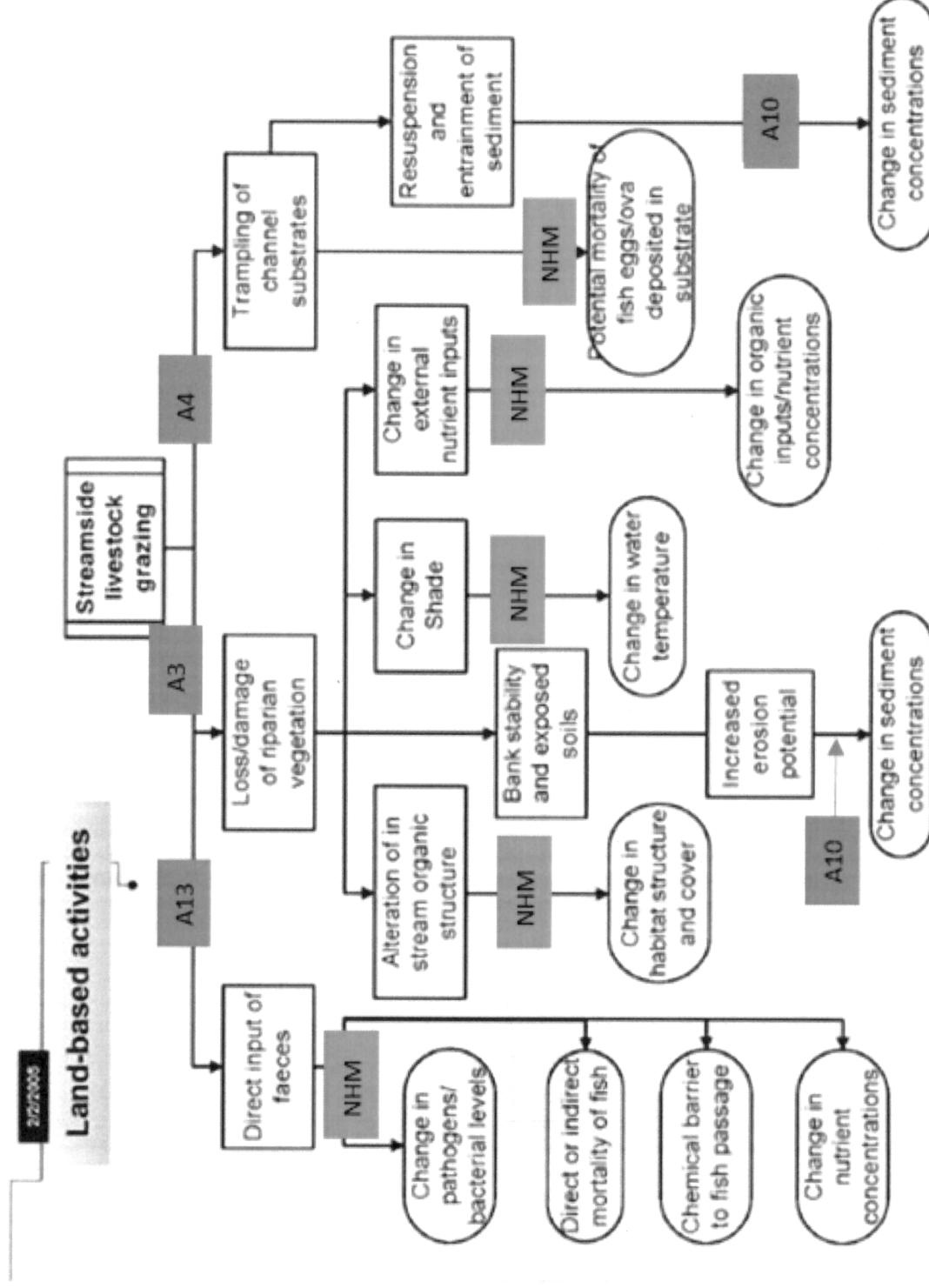


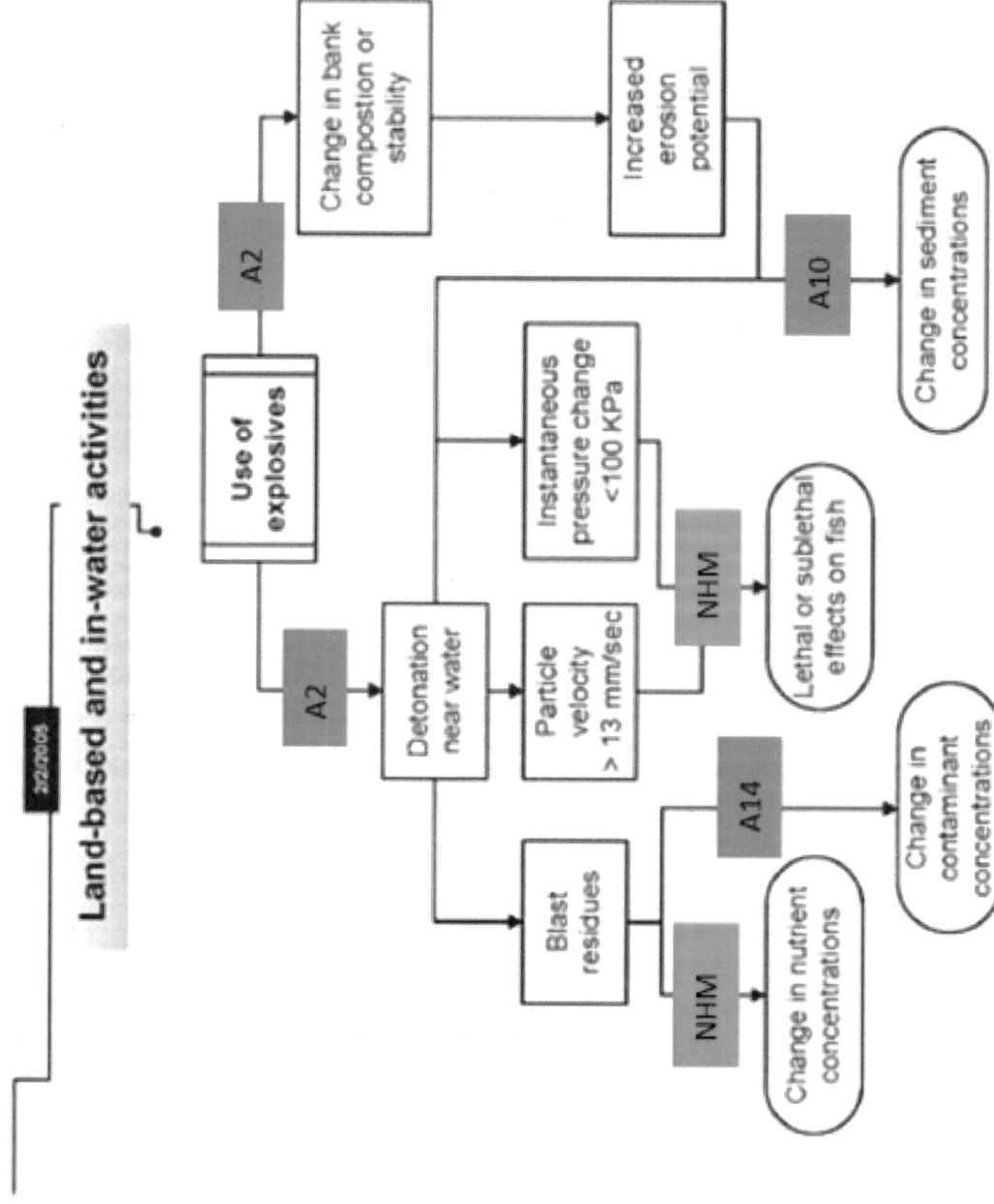


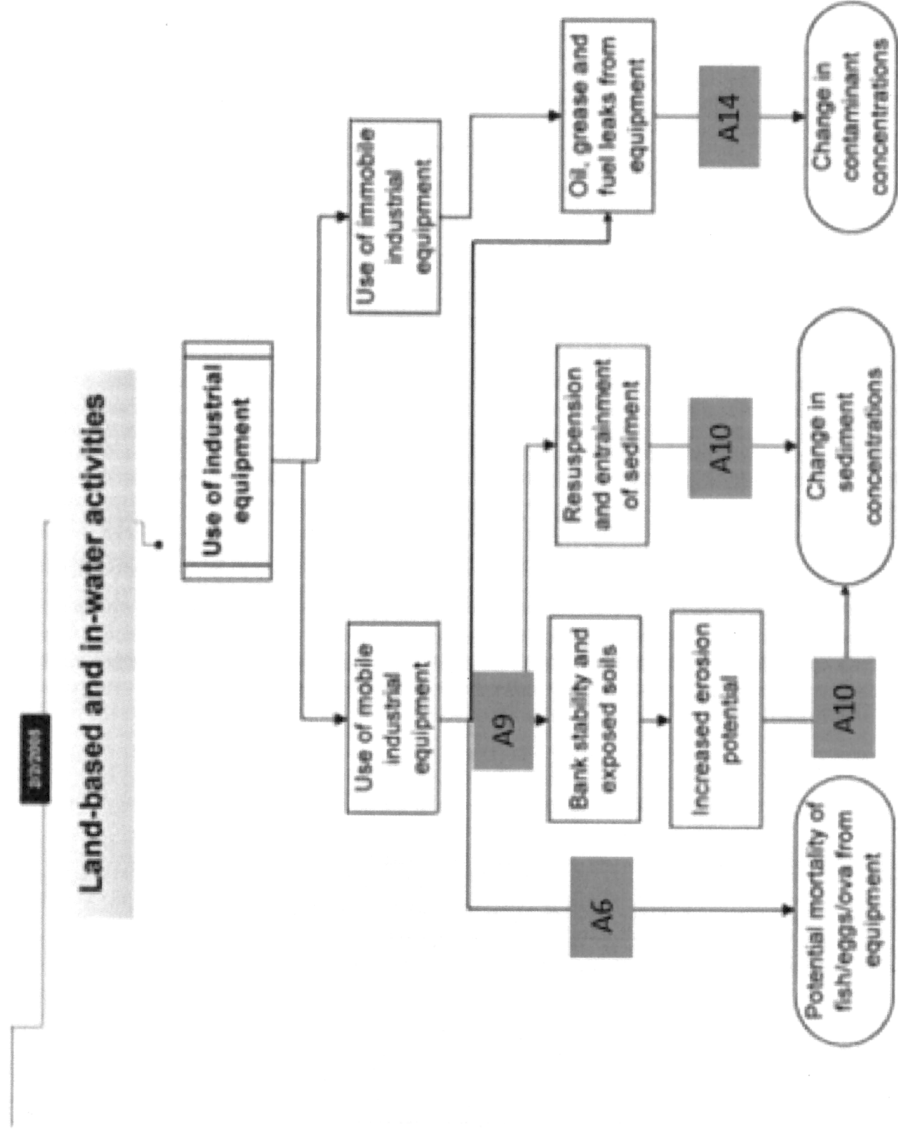


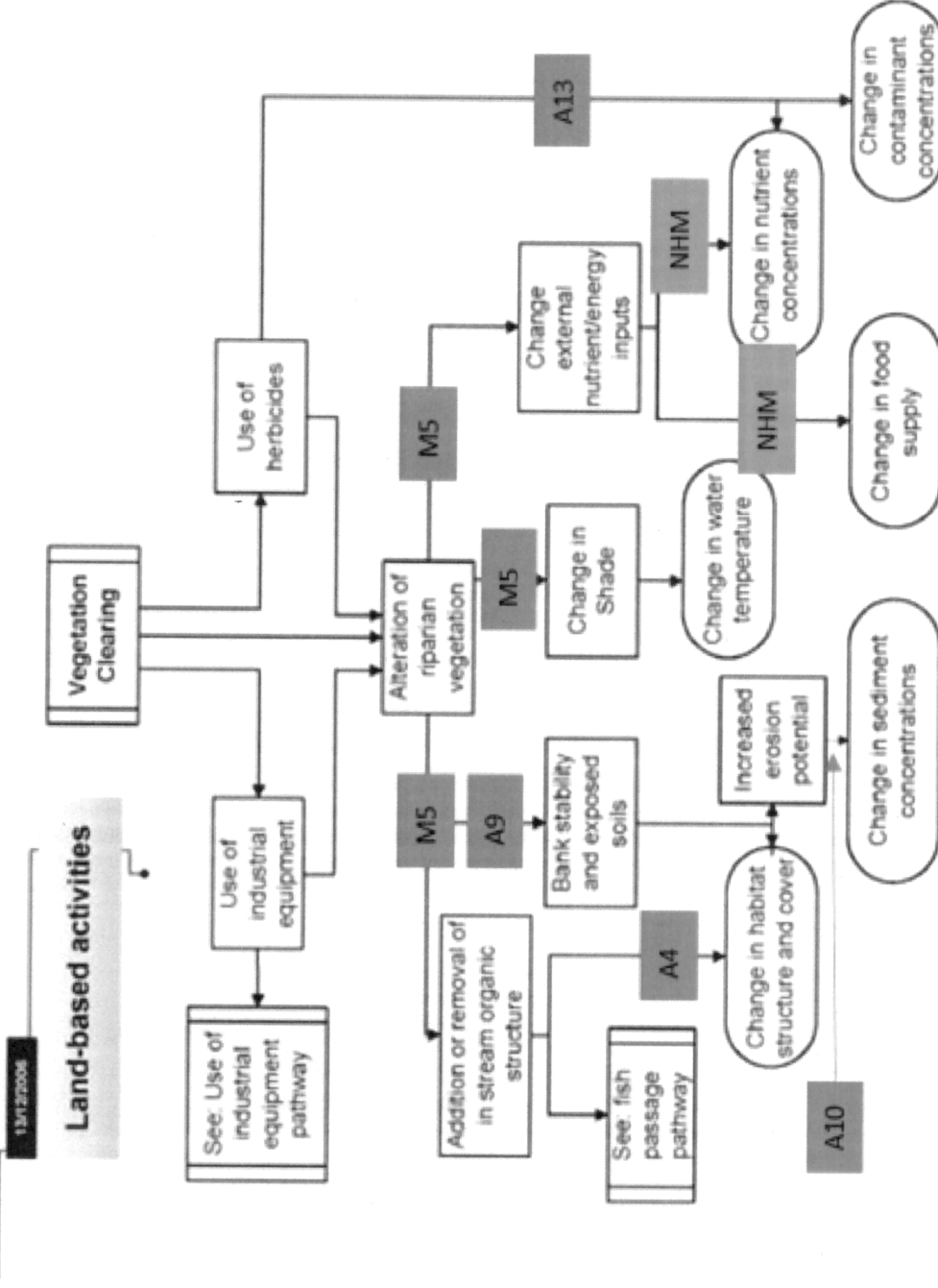




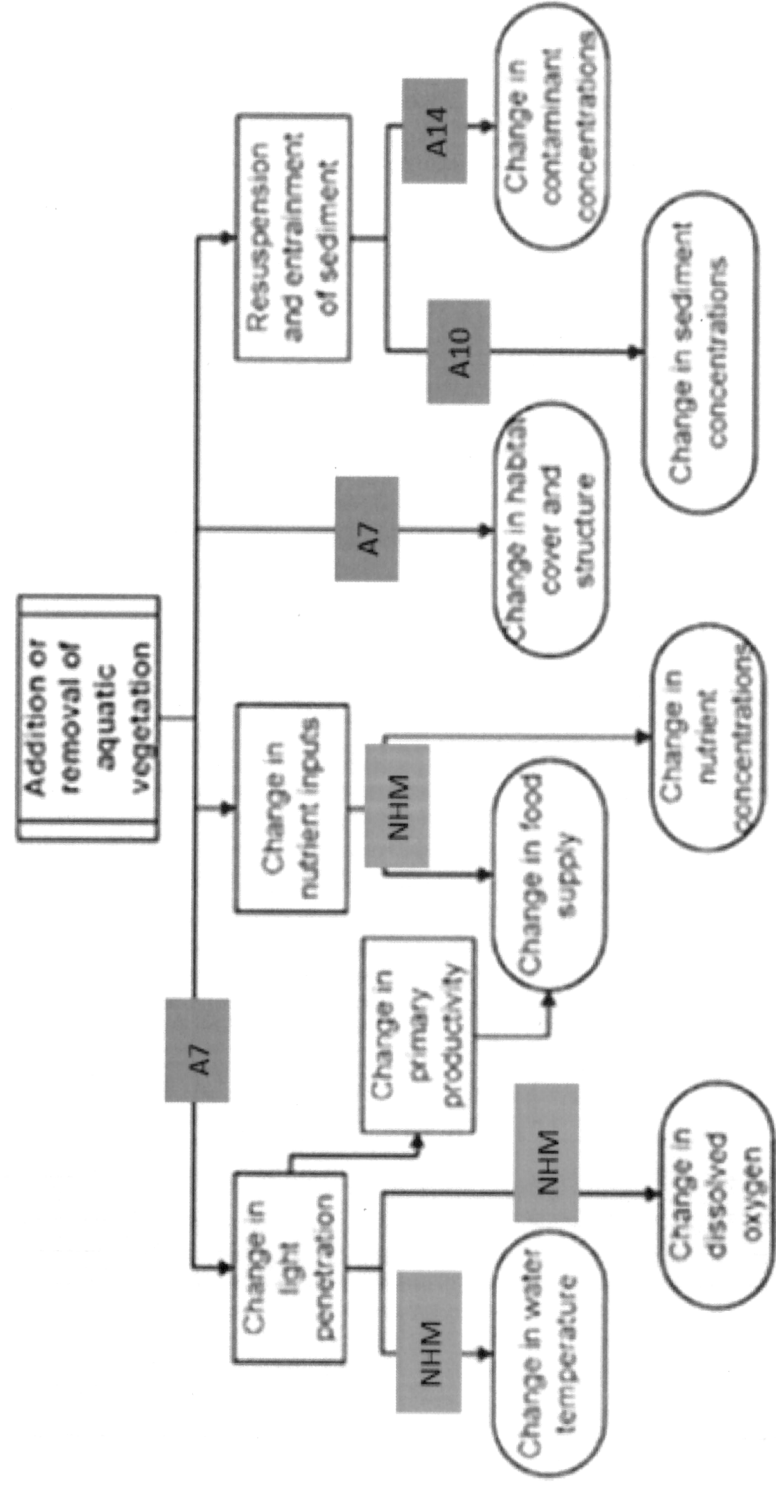


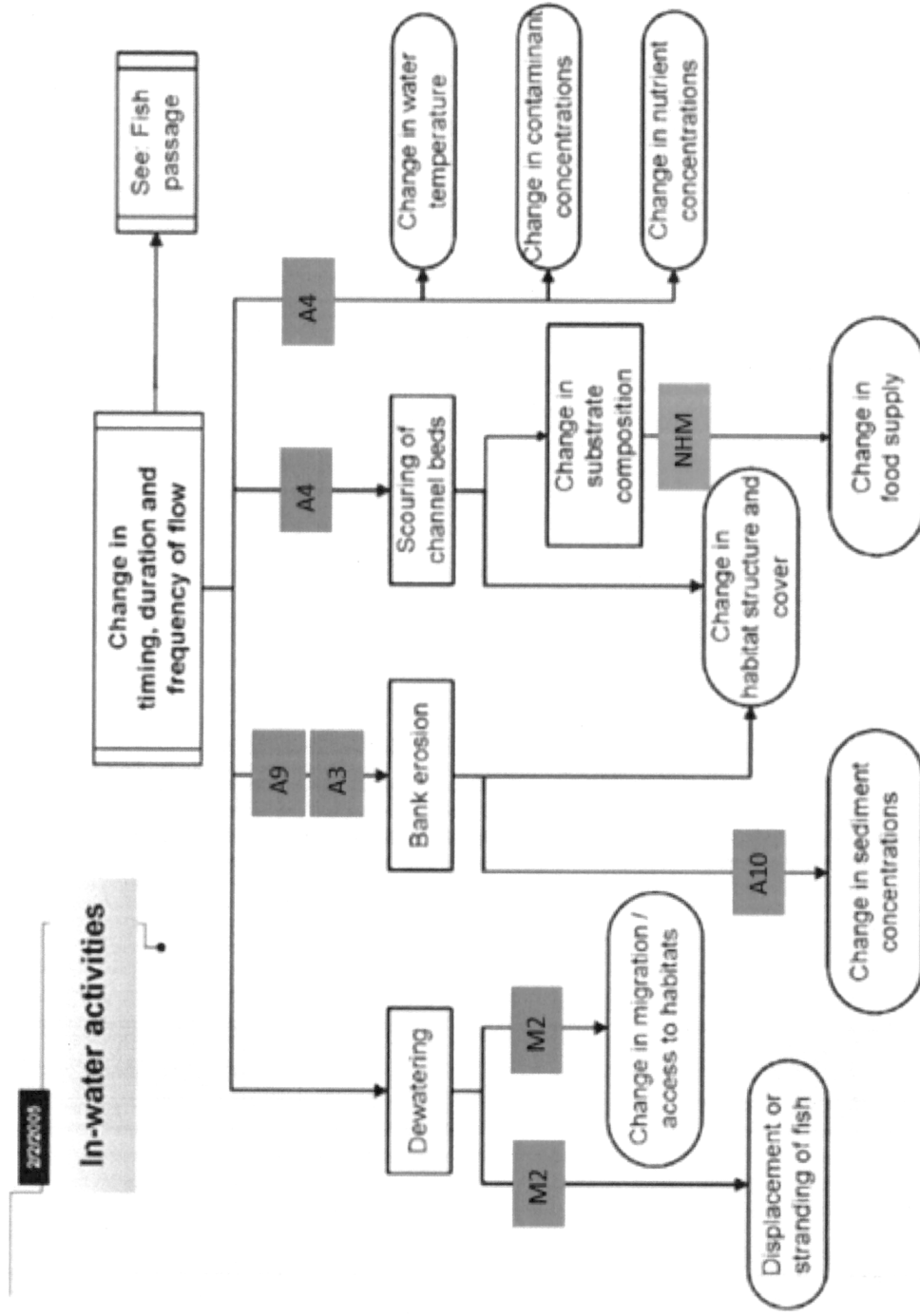






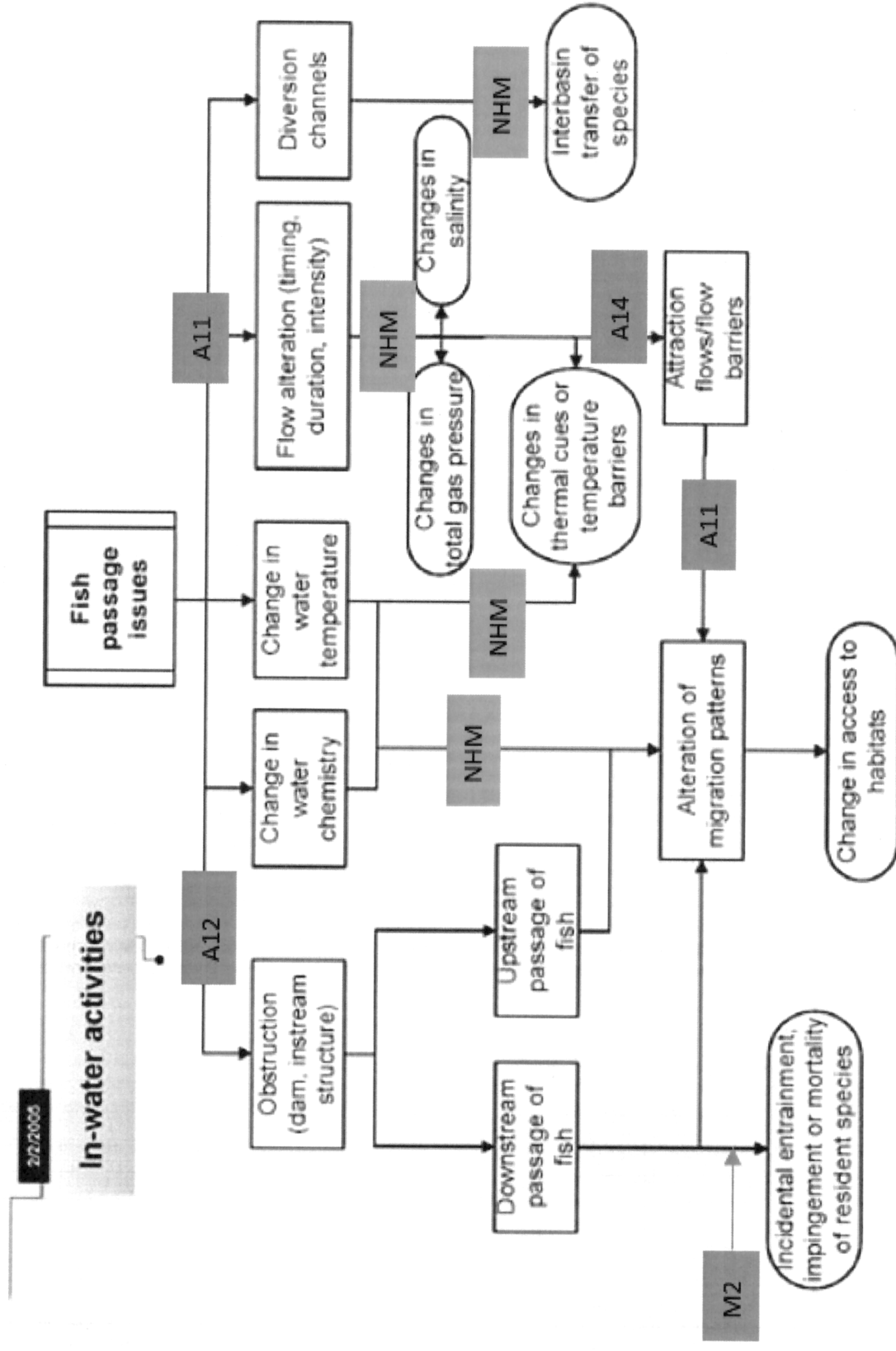
202006  
**In-water activities**

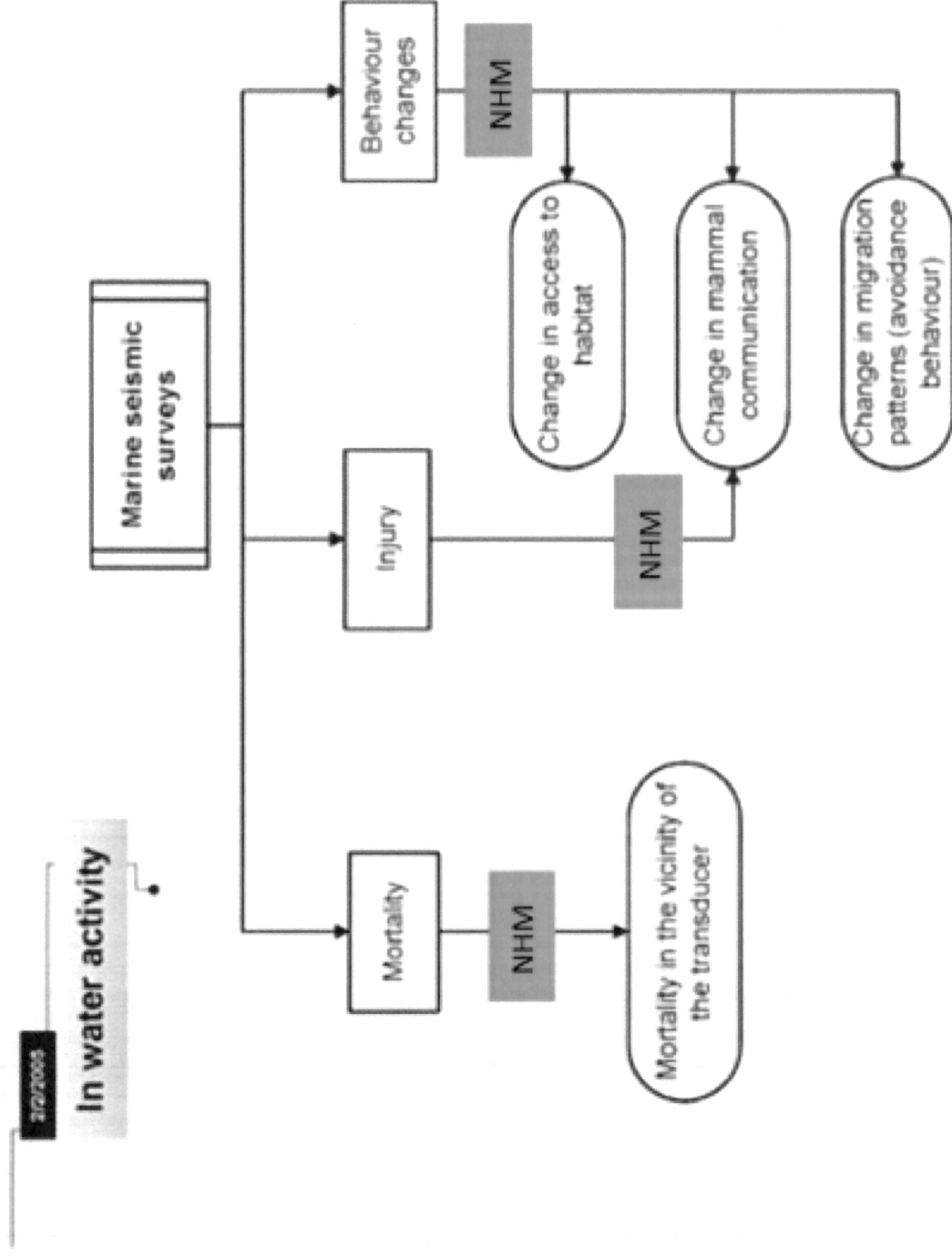


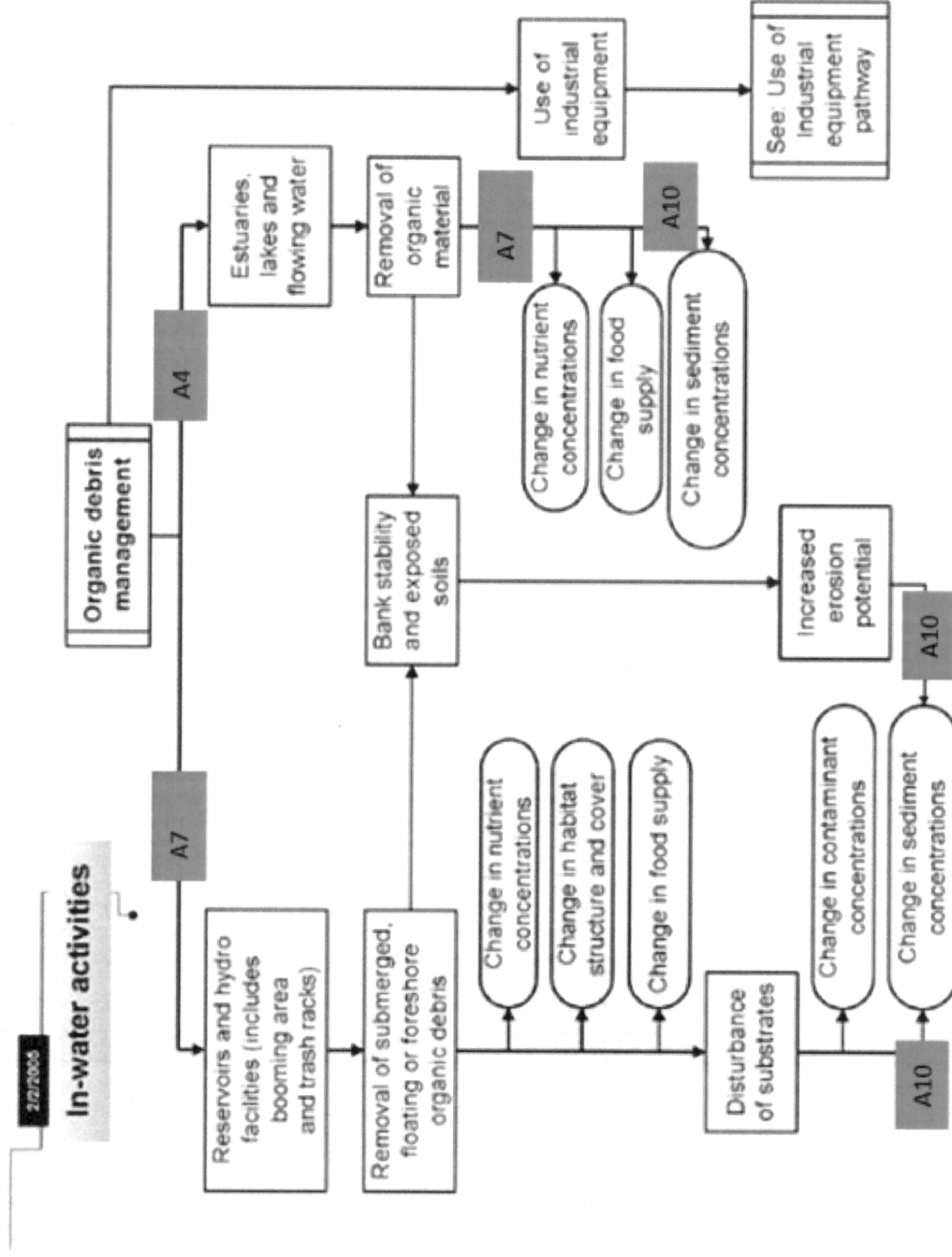




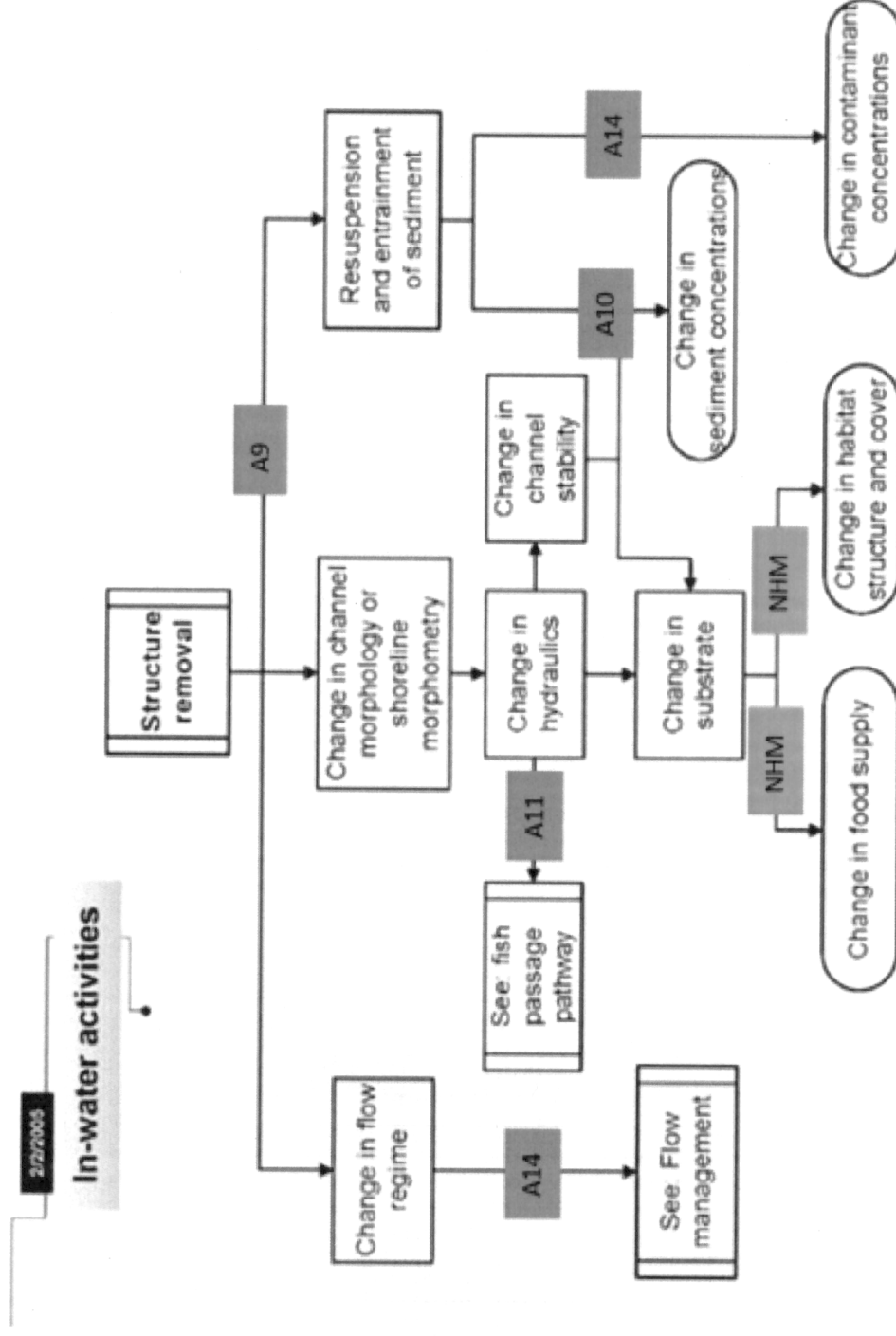


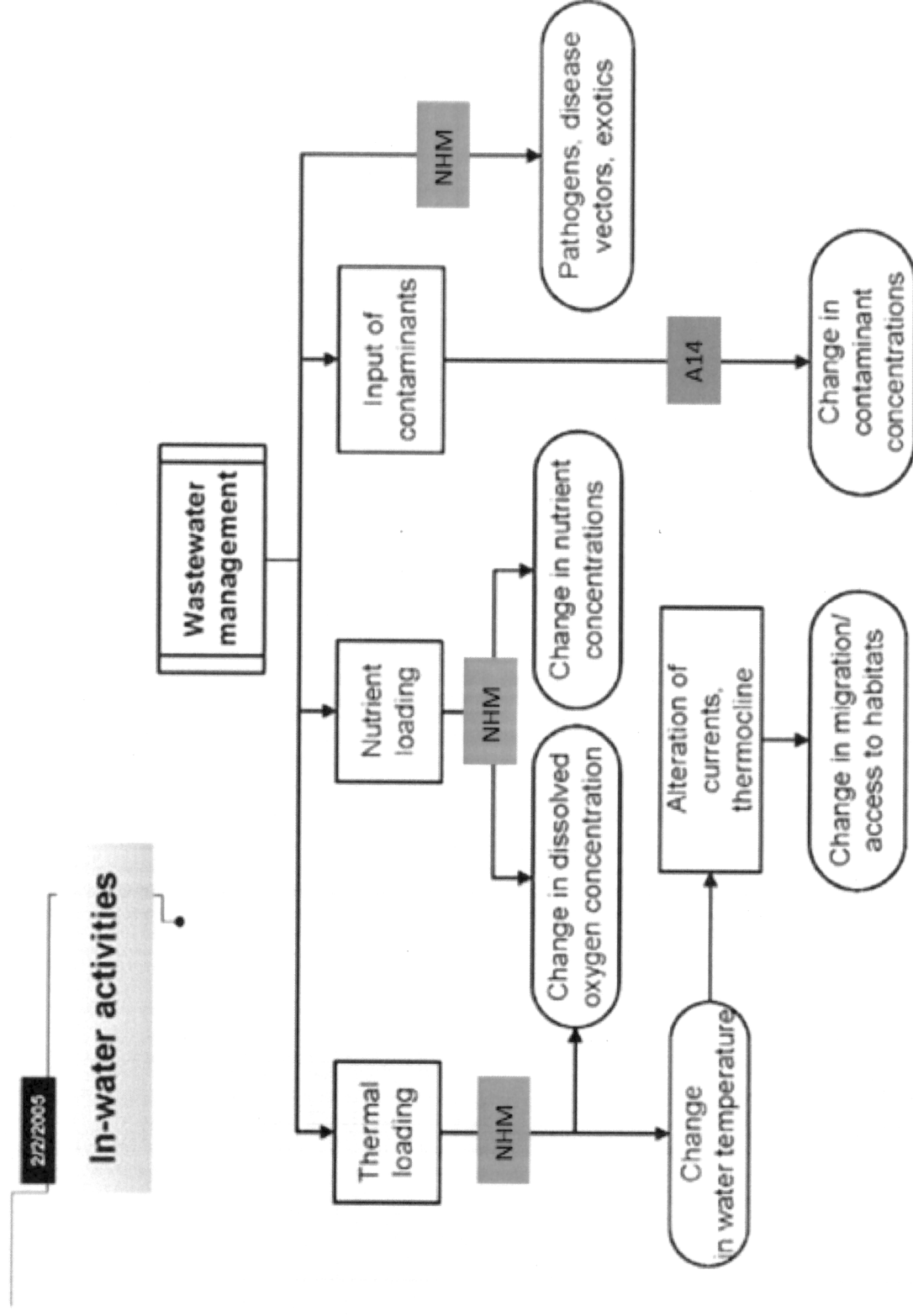




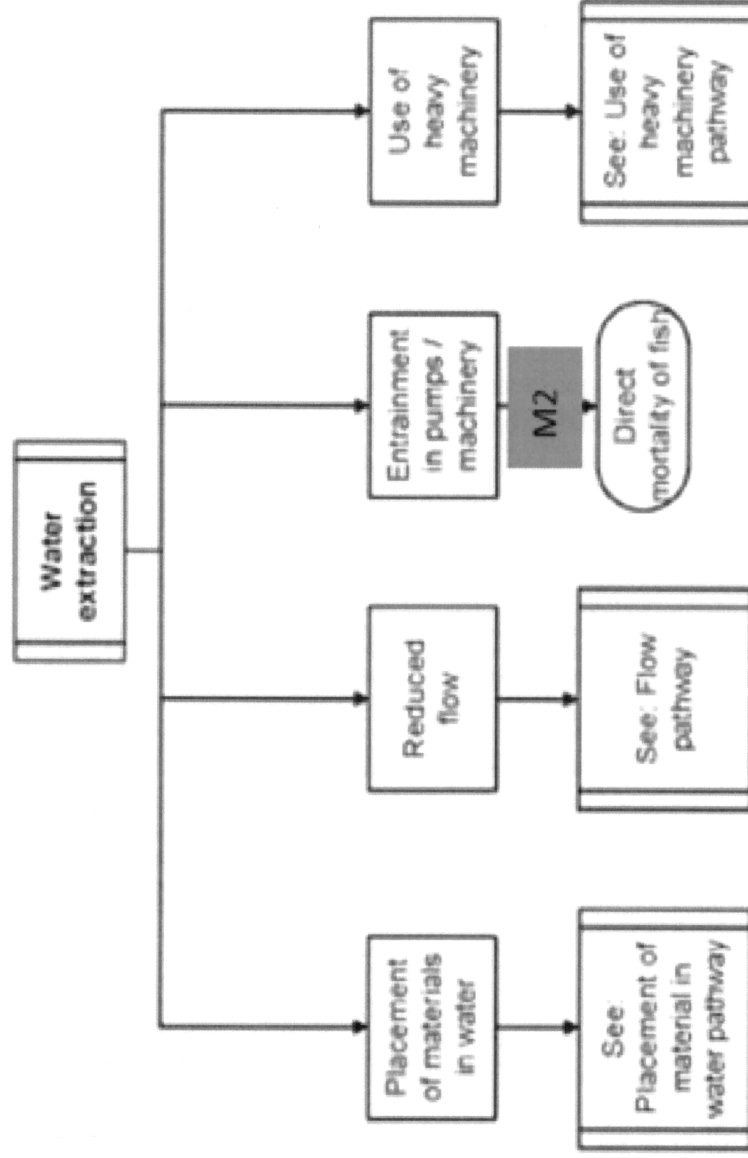








20/2006  
**In-water activities**





## Annex 3 – Risk Matrices

# High Habitat Sensitivity

SPATIAL EXTENT: Spatial overlap of the affected area with a habitat component	PERSISTENCE: The length of time that is needed for any given pressure to disappear. *		
	Low (Up to 4 weeks)	Moderate (Between 1 and 12 months)	High (More than 1 year)
<b>Widespread</b> The WUA and related pressures (i.e. the affected area) overlap much of the area occupied by the habitat component			
<b>Local</b> The WUA and related pressures (i.e. the affected area) overlap a portion of the area occupied by the habitat component			
<b>Site</b> The WUA and related pressures (i.e. the affected area) overlap a minor or negligible portion of the area occupied by the habitat component			

\*It starts from the time the WUA begins to impact a fish habitat component, to the time it may take for the resulting change to the habitat component to recover.

The impact is not likely to temporarily or permanently impair the habitat's capacity to support one or more life processes of fish, therefore a non regulatory instrument can sufficiently manage the risk associated with the impact of the WUA (DFO 2019).

The impact is likely to temporarily or permanently impair the habitat's capacity to support one or more life processes of fish (i.e. residual impact), therefore a regulatory instrument should be considered for the WUA to proceed (DFO 2019).

## Moderate Habitat Sensitivity

SPATIAL EXTENT: Spatial overlap of the affected area with a habitat component	PERSISTENCE: The length of time that is needed for any given pressure to disappear. *		
	Low (Up to 4 weeks)	Moderate (Between 1 and 12 months)	High (More than 1 year)
<b>Widespread</b> The WUA and related pressures (i.e. the affected area) overlap much of the area occupied by the habitat component			
<b>Local</b> The WUA and related pressures (i.e. the affected area) overlap a portion the of area occupied by the habitat component			
<b>Site</b> The WUA and related pressures (i.e. the affected area) overlap a minor or negligible portion of the area occupied by the habitat component			

\*It starts from the time the WUA begins to impact a fish habitat component, to the time it may take for the resulting change to the habitat component to recover.


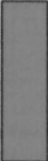



The impact is not likely to temporarily or permanently impair the habitat's capacity to support one or more life processes of fish, therefore a non regulatory instrument can sufficiently manage the risk associated with the impact of the WUA (DFO 2019).



The impacts is likely to temporarily or permanently impair the habitat's capacity to support one or more life processes of fish (i.e. residual impact), therefore a regulatory instrument should be considered for the WUA to proceed (DFO 2019).

# Low Habitat Sensitivity

SPATIAL EXTENT: Spatial overlap of the affected area with a habitat component	PERSISTENCE: The length of time that is needed for any given pressure to disappear. *		
	Low (Up to 4 weeks)	Moderate (Between 1 and 12 months)	High (More than 1 year)
<b>Widespread</b>  The WUA and related pressures (i.e. the affected area) overlap much of the area occupied by the habitat component			
<b>Local</b>  The WUA and related pressures (i.e. the affected area) overlap a portion the of area occupied by the habitat component			
<b>Site</b>  The WUA and related pressures (i.e. the affected area) overlap a minor or negligible portion of the area occupied by the habitat component			

\*It starts from the time the WUA begins to impact a fish habitat component, to the time it may take for the resulting change to the habitat component to recover.

The impact is not likely to temporarily or permanently impair the habitat's capacity to support one or more life processes of fish, therefore a non regulatory instrument can sufficiently manage the risk associated with the impact of the WUA (DFO 2019).

The impact is likely to temporarily or permanently impair the habitat's capacity to support one or more life processes of fish (i.e. residual impact), therefore a regulatory instrument should be considered for the WUA to proceed (DFO 2019).

## Annex 4 – Case Study Examples

***-to be developed***

October 2019

## Annex 4 – Risk Documentation Form

This completed and signed form must be uploaded to the Referral Action Log of PATH.

### Risk Assessment - Triage

#### Section 1. Risk Identification

##### 1.1. Project Details

##### 1.1. a) Project information

Project name:	
Name of the waterbody:	
PATH #:	
Name of the nearest location:	
Waterbody type(s):	<input type="checkbox"/> Freshwater <input type="checkbox"/> Marine <input type="checkbox"/> Estuary
Proponent:	
Regulatory review unit:	
Form prepared by:	

##### 1.1. b) Project description

--

If relevant, provide context or background in Appendix A.

##### 1.1. c) WUA description

Identify and briefly describe all works, undertakings or activities (WUA) that have the potential to affect fish and/or fish habitat or aquatic species at risk.

Code	Name	Footprint (m <sup>2</sup> )	Duration of the W/U/A	Brief description
WUA #1				
WUA #2				
...				

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## 1.2. Fish species present and habitat description

### 1.2. a) Fish species

Code or name of the WUA	Species likely to be affected by the proposed WUA

### 1.2. b) Habitat description

Code or name of the WUA	Habitat likely to be affected by the proposed WUA

### 1.2. c) Aquatic species at risk listed under the *Species at Risk Act* (SARA)

Are Schedule 1 listed aquatic species at risk present in the vicinity of the project?

Yes ☐

No ☐

If yes, list the aquatic species at risk, their status and indicate if critical habitat and/or residence are present in the vicinity of the project.

Code or name of the WUA	SARA Species	Species and habitat status
		<input type="checkbox"/> Endangered or Threatened <input type="checkbox"/> Special Concern <input type="checkbox"/> No Critical Habitat or Residences present in the vicinity of the project <input type="checkbox"/> Critical Habitat present in the vicinity of the project <input type="checkbox"/> Residences present in the vicinity of the project
		<input type="checkbox"/> Endangered or Threatened <input type="checkbox"/> Special Concern <input type="checkbox"/> No Critical Habitat or Residences present in the vicinity of the project <input type="checkbox"/> Critical Habitat present in the vicinity of the project <input type="checkbox"/> Residences present in the vicinity of the project

## **Section 2. Risk Analysis - Standardized Measures**

### **2 a) Potential pressures on fish and fish habitat resulting from WUA(s)**

Based on the pathways, list all potential pressures using Table 1 of the Risk Management Guide.

--

### **2 b) Standardized measures to avoid and mitigate pressures.**

List all relevant standardized measures using Annex 1 and 2, and regional SAR tables.

--

### **2 c) Pressures not addressed by standardized measures.**

After consideration of the standardized measures, are there any pressures that are not addressed?

Yes ☐

No ☐

If yes, list them here and send to regulatory review:

--

If no (i.e. all the pressures are addressed after consideration of the standardized measures), a Letter of Advice can be issued. Complete the Triage Assessor Sign-off, skip section 3 and 4, and select the appropriate checkbox in section 5a), complete 5b) if applicable.

### ***Triage Assessor Sign-off (on sections 1 - 2 of the form)***

<b>Prepared by:</b>	
<b>Date:</b>	
<b>Comments:</b>	



## **Risk Assessment – Regulatory Review**

### **Section 3. Risk Analysis - Site Specific Measures**

#### **3 a) Additional measures**

List any additional site-specific avoidance and mitigation measures (either identified by the proponent or by regulatory review) that should be applied to avoid and mitigate pressures on fish and fish habitat.

Has there been discussion(s) with the proponent to identify these measures? Document whether the proponent has agreed to implement them.

After consideration of the site-specific measures, are there any pressures on fish and fish habitat, including Species at Risk, critical habitat and/or residences, that are not addressed?

Yes ☐

No ☐

If yes, list and describe them here:

#### **3 b) Summary of prohibited effects to aquatic species at risk**

Will the pressures caused by each WUA affect aquatic species at risk that are listed as endangered or threatened under SARA: harm; harass; capture or kill an individual of an aquatic SARA-listed species; damage or destruction of a residence of an aquatic SARA-listed species; and/or destruction of critical habitat of an aquatic SARA-listed species.

Is there a prohibited effect to listed aquatic species at risk?

Code or name of the WUA	Species at Risk Act (SARA)
	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> N/A*
	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> N/A*

\* If there are no prohibited effect or no SARA issues, check "N/A".

## Section 4. Risk Evaluation

Code or name of the WUA	Habitat components in the Affected Area:	Habitat Sensitivity	Persistence	Spatial Extent
WUA #1:	Habitat component #1:	<input type="checkbox"/> Low <input type="checkbox"/> Average <input type="checkbox"/> High	<input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	<input type="checkbox"/> Site <input type="checkbox"/> Local <input type="checkbox"/> Widespread
	Rational for habitat sensitivity, persistence and/or spatial extent:			
	Habitat component #2:	<input type="checkbox"/> Low <input type="checkbox"/> Average <input type="checkbox"/> High	<input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	<input type="checkbox"/> Site <input type="checkbox"/> Local <input type="checkbox"/> Widespread
	Rational for habitat sensitivity, persistence and/or spatial extent:			
	Habitat component #3:	<input type="checkbox"/> Low <input type="checkbox"/> Average <input type="checkbox"/> High	<input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	<input type="checkbox"/> Site <input type="checkbox"/> Local <input type="checkbox"/> Widespread
	Rational for habitat sensitivity, persistence and/or spatial extent:			
WUA #2:	Habitat component #1:	<input type="checkbox"/> Low <input type="checkbox"/> Average <input type="checkbox"/> High	<input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	<input type="checkbox"/> Site <input type="checkbox"/> Local <input type="checkbox"/> Widespread
	Rational for habitat sensitivity, persistence and/or spatial extent:			
	Habitat component #2:	<input type="checkbox"/> Low <input type="checkbox"/> Average <input type="checkbox"/> High	<input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	<input type="checkbox"/> Site <input type="checkbox"/> Local <input type="checkbox"/> Widespread
	Rational for habitat sensitivity, persistence and/or spatial extent:			
	Habitat component #3:	<input type="checkbox"/> Low <input type="checkbox"/> Average <input type="checkbox"/> High	<input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High	<input type="checkbox"/> Site <input type="checkbox"/> Local <input type="checkbox"/> Widespread
	Rational for habitat sensitivity, persistence and/or spatial extent:			

### 4 a) Matrices

Based on the information above and on the matrix, what instrument is recommended to manage the risk associated with the project?

Non-regulatory (Letter C) ☐

Regulatory (Authorization) ☐

Provide rationale to support decision when plotted in a box with two colours:

**4 b) Is the instrument recommended by the matrix appropriate given the persistence and spatial extent of the impact and the sensitivity of the fish and fish habitat?**

Yes ☐

No ☐

If no, provide rationale:

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***Regulatory Review Assessor Sign-off (on section 3 of the form)***

<b>Prepared by:</b>	
<b>Date:</b>	
<b>Comments:</b>	

October 2019

## Section 5. Recommended Communication to the Proponent

### 5 a) Recommended communication to the proponent

Based on section 3 (a) above and the analysis provided in this form, indicate the type of communication that should be sent to the proponent. Provide a rationale in the box below.

<b>Type of communication</b>	<input type="checkbox"/> LoA with standardized measures <input type="checkbox"/> Site-specific LoA (Letter C – Avoid & Mitigate) no SAR mitigation <input type="checkbox"/> Site-specific LoA (Letter C – Avoid & Mitigate) with SAR Mitigation <input type="checkbox"/> Application for stand-alone SARA Permit should be requested (for section 32 of SARA). This letter may contain mitigation for other fish species. <input type="checkbox"/> Application for <i>Fisheries Act</i> authorization should be requested <input type="checkbox"/> Application for <i>Fisheries Act</i> EMERGENCY authorization should be requested
Rationale:	

### 5 b) Signature

<b>Reviewed by:</b>	
<b>Date:</b>	
<b>Comments:</b>	

I concur with the analysis and recommended communication:

<b>Regulatory Review Manager:</b>	
<b>Date:</b>	
<b>Comments:</b>	

### Internal review – For internal audit use only

Internal Review —

- Requested Yes ☐ No ☐
- Done Yes ☐ No ☐

**Appendix A** - Add any additional references or information (optional). Upload photos into PATH as per data entry protocol and reference them here.